United States Department of Agriculture

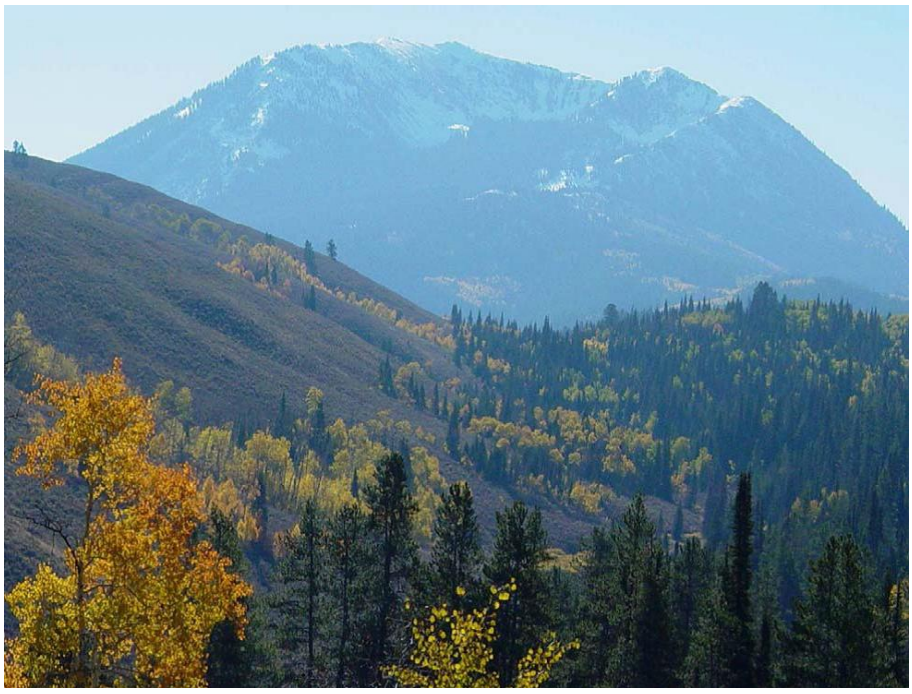
Forest Service

March2017

DraftEnvironmental Impact Statement

Winschell Dugway Motorized Trail Project

Soda Springs Ranger District, Caribou-Targhee National Forest
Bonneville County, Idaho



Winschell Dugway Motorized Trail Project

Draft Environmental Impact Statement
Bonneville County, Idaho

Lead Agency:	**USDAForest Service**
Responsible Official:	**Bryan Fuell, District Ranger** **410 East Hooper Ave., Soda Springs, ID 83276**
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Project Website:	**http://www.fs.usda.gov/project/?project=48732**

Abstract: This Draft Environmental Impact Statement (DEIS) has been prepared to analyze and disclose the effects of building and designating a motorized trail located approximately 45 miles northeast of Soda Springs, Idaho. The purpose of this project is to respond to outside public interest to provide an additional motorized trail opportunity – connecting Forest Road #189 at Morgan Meadows to Forest Road #165, which ends at the deserted historic mining town of Caribou City. The new trail would provide a motorized trail opportunity for Forest visitors to experience more of the gold mining history of the mountain. This DEIS includes the purpose and need for the proposed action, alternatives to the proposed action, project design criteria, and potential impacts of implementing each alternative.Three alternatives were analyzed in detail in the DEIS:

Alternative 1: No Action Alternative.No motorized route would be created from Morgan Meadows to Caribou City.

Alternative 2: Proposed Action.This alternative includes constructing and reconstructing approximately 8 miles of new trail and managing the new trail as a motorized ATV trail.

Alternative 3: This alternative includes constructing and reconstructing approximately 3 miles of new trail and managing the new trail as a motorized ATV trail.

Based upon the effects of the alternatives, the responsible official will decide whether or not to construct and reconstruct a motorized trail from Morgan Meadows to Caribou City.

Alternative 3 is the Agency's preferred alternative.

The Forest Service is currently requesting public comments concerning the scope and content of the DEIS. Reviewers should provide the Forest Service with their comments during the review period of the draft environmental impact statement. This will enable the Forest Service to analyze and respond to the comments at one time and to use information acquired in the preparation of the final environmental impact statement, thus avoiding undue delay in the decision-making process. Reviewers have an obligation to structure their participation in the National Environmental Policy Act process so that it is meaningful and alerts the agency to the reviewers' position and contentions. Vermont Yankee Nuclear Power Corp. v. NRDC, 435 U.S. 519, 553 (1978). Environmental objections that could have been raised at the draft stage may be waived if not raised until after completion of the final environmental impact statement. City of Angoon v. Hodel (9th Circuit, l986) and Wisconsin Heritages, Inc. v. Harris, 490 F. Supp. 1334, 1338 (E.D. Wis. 1980). Comments on the draft environmental impact statement should be specific and should address the adequacy of the statement and the merits of the alternatives discussed (40 CFR 1503.3).

Public comment on this analysis is pursuant to the pre-decisional administrative review process described at 36 CFR 218, Subparts A and B. Public comments will be accepted for 45 calendar days following the publication of the notice of availability (NOA) of the DEIS in the Federal Register. If the comment period would end on a Saturday, Sunday, or federal holiday, comments will be accepted until the end of the next working day. No comments will be accepted after the 45 day comment period ends.

Comments submitted in response to this solicitation must meet the definition of "specific written comments" as defined at 36 CFR 218.2, particularly "…specific written comments should be within the scope of the proposed action, have a direct relationship to the proposed action, and must include supporting reasons for the responsible official to consider."

Only those who submit timely and specific written comment and meet all the requirements contained in 36 CFR 218.25 (a)(3) will have standing to object to the project during the 45 day objection period, which will occur following the distribution of the Final Environmental Impact Statement and draft Record of Decision. For objection eligibility, each individual or representative from each entity submitting timely and specific written comments must either sign the comment or verify identity upon request. Names and contact information submitted with comments will become part of the public record.

Written comments may be submitted to:	**Jessica Taylor, Forest NEPA Planner** **1405 Hollipark Drive, Idaho Falls, ID 83401**
Fax comments may be sent to:	**208-557-5826**
Submit electronic comments to:	**comments-intermtn-caribou-targhee@fs.fed.us** **Please note in the subject line that the comments are for the "Winschell Dugway Motorized Trail Project."**
Hand Delivered Comments:	**Caribou-Targhee National Forest** **1405 Hollipark Drive, Idaho Falls** **Between the hours of 8:00 a.m. and 4:30 p.m.**
Date Comments Must Be Received:	**Comments must be received or postmarked within 45 days of the publication of the Notice of Availability in the Federal Register.**

SUMMARY

The Caribou-TargheeNational Forest proposes toprovide an additional motorized trail opportunity on Caribou Mountain connecting Forest Road #189 at Morgan Meadows to Forest Road #165, which ends at the deserted historic mining town of Caribou City. The new trail would make it easier for Forest visitors to experience more of the gold mining history of the mountain.The project area is located approximately 45 miles northeast of Soda Springs, Idaho and includes National Forest System lands within the Barnes Creek, Anderson Gulch, Bilk Creek, Jackknife Creek, and Tincup Creek drainages.

In February, 2016 a notice was published in the Federal Register for this project. A scoping letter was mailed to approximately 160 individuals, groups and government agencies on February 22, 2016; 32 comments were received.

Issues raised by the public include the potential for project activities to impact: soils, water quality, fish habitat and aquatic species and their habitat, roadless areas, recommended wilderness areas, recreation, vegetation, and wildlife. These issues led the agency to analyze three alternatives including the no action alternative. The differences in the action alternatives are the routes of the motorized trail and the miles of trail that would be constructed/reconstructed.

A brief summary of conclusions include:

- *Soils*: For either action alternative, the new trail location has been planned and field checked to minimize concerns of landform stability. Both action alternatives disturb acres of land with productive soil; in Alternative 2, more acres would be disturbed than in Alternative 3.
- *Water Resources*:The construction of new motorized route within aquatic influence zones (AIZs) is expected to have a minor negative impact on water quality in the short term, improving over two years. The long term impacts are expected to be very minor. The effects to water quality related to ATV trail bridge construction are relatively small due to the small scale of bridge construction. The negative effects would be mostly short-term decreasingto very minor impacts in the long term.
- *Fish Habitatand Aquatic Species:*The action alternatives would increase miles of motorized trails in AIZs and the number of trail crossings in the project area. This new infrastructure will create disturbance within the AIZ and has the potential to degrade AIZ conditions above existing conditions. The miles of new trail in the AIZ would be constructed with minor impacts in the short term decreasing to very minor impacts in the long term.
- *Recreation*

  Roadless Areas: Roadless Characteristics would be affected, however, the proposed project would not affect the areas suitability for wilderness designation.
  Recommended Wilderness Areas: Wilderness Attributes would be affected, however, the proposed project would not affect the areas suitability for wilderness designation. Both action alternatives would have a visual and sound impact to the Caribou City RWA; in Alternative 2, more acres would be disturbed than in Alternative 3.
- *Wildlife:*Additional miles of motorized trail would result in impacts on wildlife known to occur in the project area. Impacts include habitat fragmentation, displacement, avoidance of the trail corridor, disturbance etc. Both Alternatives 2 and

Alternatives 3 would result in a *"No Impact or May Impact Individuals or habitat, but will not likely contribute to a trend towards federal listing or cause a loss of viability to the population or species."*

- *Rangeland Resources and Noxious & Invasive Species:*It is expected, with the implementation of the Early Detection Rapid Response mitigation, the potential acres of infestation would be minimal.

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CHAPTER 1. PURPOSE OF AND NEED FOR ACTION

Document Structure

The Forest Service has prepared this Environmental Impact Statement (EIS) in compliance with the National Environmental Policy Act (NEPA) and other relevant Federal and State laws and regulations. This EIS discloses the direct, indirect, and cumulative environmental impacts that would result from the proposed action and alternatives. The document is organized into four chapters:

- *Chapter 1. Purpose and Need for Action:* This chapter includes information on the history of the project proposal, the purpose of and need for the project, and the agency's proposal for meeting that purpose and need. This section also details how the Forest Service informed the public of the proposal and how the public responded.
- *Chapter 2. Alternatives, including the Proposed Action:* This chapter provides a more detailed description of the agency's proposed action as well as alternative methods for achieving the stated purpose and design features. These alternatives were developed based on significant issues raised by the public and other agencies. Finally, this section provides a summary table of the environmental consequences associated with each alternative.
- *Chapter 3. Affected Environment and Environmental Consequences*: This chapter describes the environmental effects of implementing the proposed action and other alternatives. This analysis is organized by resource.
- *Chapter 4. Consultation and Coordination:* This chapter provides a list of preparers and agencies consulted during the development of the environmental impact statement.
- *Appendices:* The appendices provide more detailed information to support the analyses presented in the environmental impact statement.

Additional documentation, including more detailed analyses of project-area resources, may be found in the project planning record located at the Caribou-Targhee National Forest Headquarters Office.

Background

The Caribou Travel Plan Revision FEIS provides a brief summary of the history of the Winschell Dugway on Caribou Mountain:

The Winschell Dugway was a freight route for Caribou City and other mining operations from the 1880s and later. After the gold rush subsided around 1910, Caribou City slowly declined. Caribou City was almost abandoned by 1920.

With the demise of the Caribou area mining towns, the Winschell Dugway became a popular "jeep" route for fall hunting, sight-seeing, and access into the historic mining area. During the 1950s and up to the mid-1980s, the most common motorized vehicle on the forest was a full-sized four-wheel or two-wheel drive vehicle such as a Jeep or truck.All-terrain vehicles, ATVs, were not commonly used on forest roads and trails until the late 1980s.

Through the 1970s and 80s, the steep, dirt road was often impassable to trucks and jeeps when the surface was wet in the spring and the fall months. Full-sized vehicles using the road during wet conditions created ruts and drainage problems and the need for annual maintenance. In the mid-1980s, the Soda Springs District Ranger closed the route to motorized vehicles to prevent erosion and for user safety (former District Ranger, personal communication). The Winschell Dugway has been mapped as a non-motorized trail for the past 20 years.

Public comments received during several planning efforts included a strong interest in managing the historic wagon road as a trail; both as non-motorized and motorized.

Bonneville County has been a partner with the Caribou-Targhee National Forest in managing and maintaining forest trails and roads within the county. County Commissioners and County Parks and Recreation staff proposed the construction of this ATV trail.

Individual road and trail management and snow season travel management was determined by the Caribou Travel Plan Revision EIS and Record of Decision in 2005. This NEPA process analyzed management alternatives for the Soda Springs, Montpelier, and Westside districts, excluding the Curlew National Grasslands. The Record of Decision for the travel plan stated that management of the non-motorized trail that occurs on portions of the Winschell Dugway wagon road would be analyzed at a later date (USDA - FS, 2005). Preliminary field work for the Winschell Dugway analysis began in 2006 in cooperation with Idaho Fish and Game, Idaho Department of Parks and Recreation, and Bonneville County Parks and Recreation.

Project Area and Location

The project area is located in Bonneville County, on Caribou Mountain east of Gray's Lake Wildlife Refuge and approximately 45 miles northeast of Soda Springs, Idaho and includes National Forest System lands within the Barnes, Anderson Gulch, Bilk, Jackknife, and Tincup drainages.

The project area is within T4S, R44E, Sections 2, 3, 4, 7, 9, 10, 11, 14, 15, 18, 22, and 27.

The project lies within the Caribou City Inventoried Roadless Area (IRA). The 2003 Revised Forest Plan manages the eastern portion of the Caribou City Roadless Area as 1.3 (e), Recommended Wilderness and the western portion as 2.1.4, Caribou Mountain Special Emphasis Area (as shown in Figure 2). The proposed activities for this projectare not within the Recommended Wilderness area.

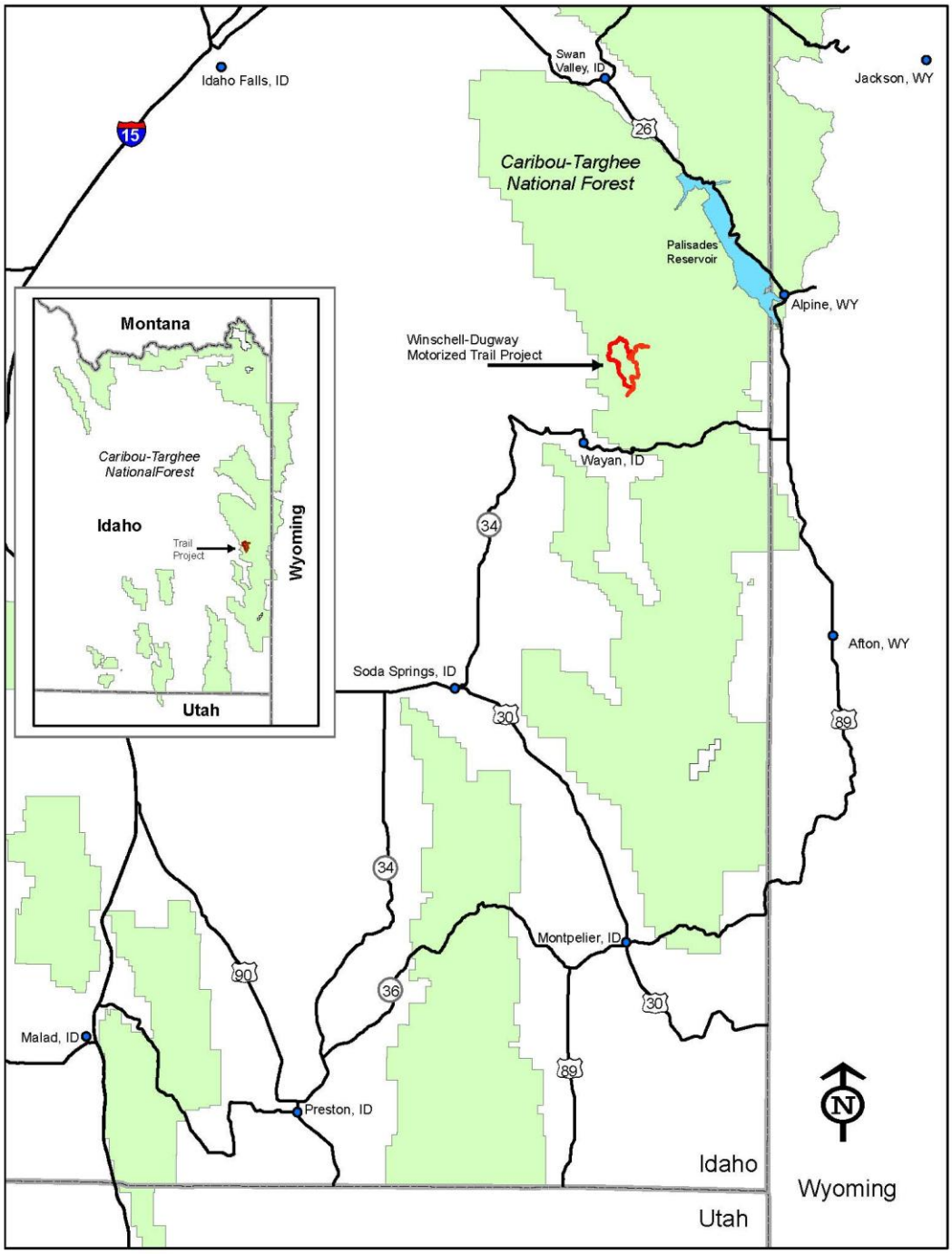

Figure 1. Winschell Dugway Motorized Trail Project General Vicinity Map.

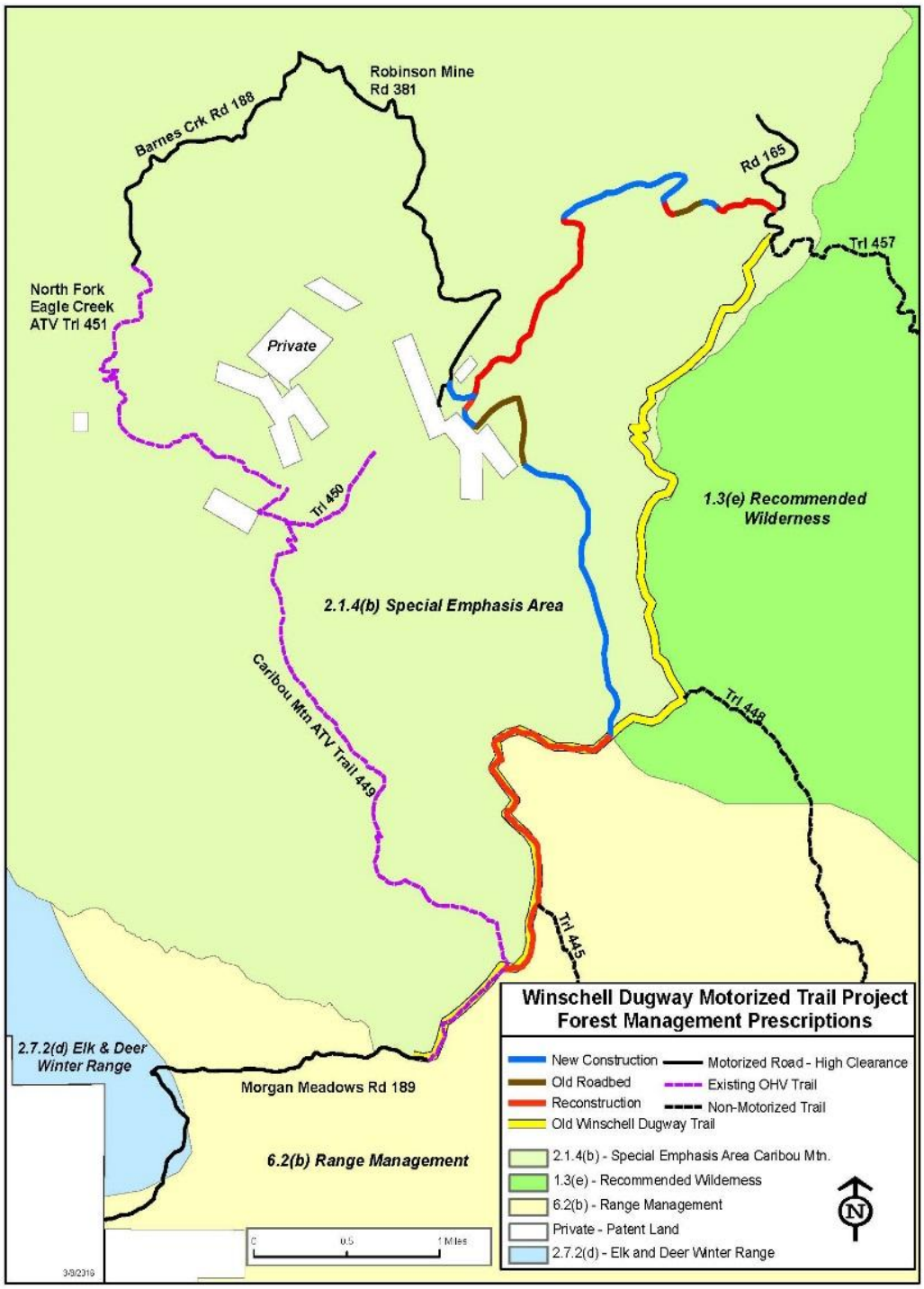

Figure 2. Winschell Dugway Motorized Trail Project Forest Plan Management Prescriptions.

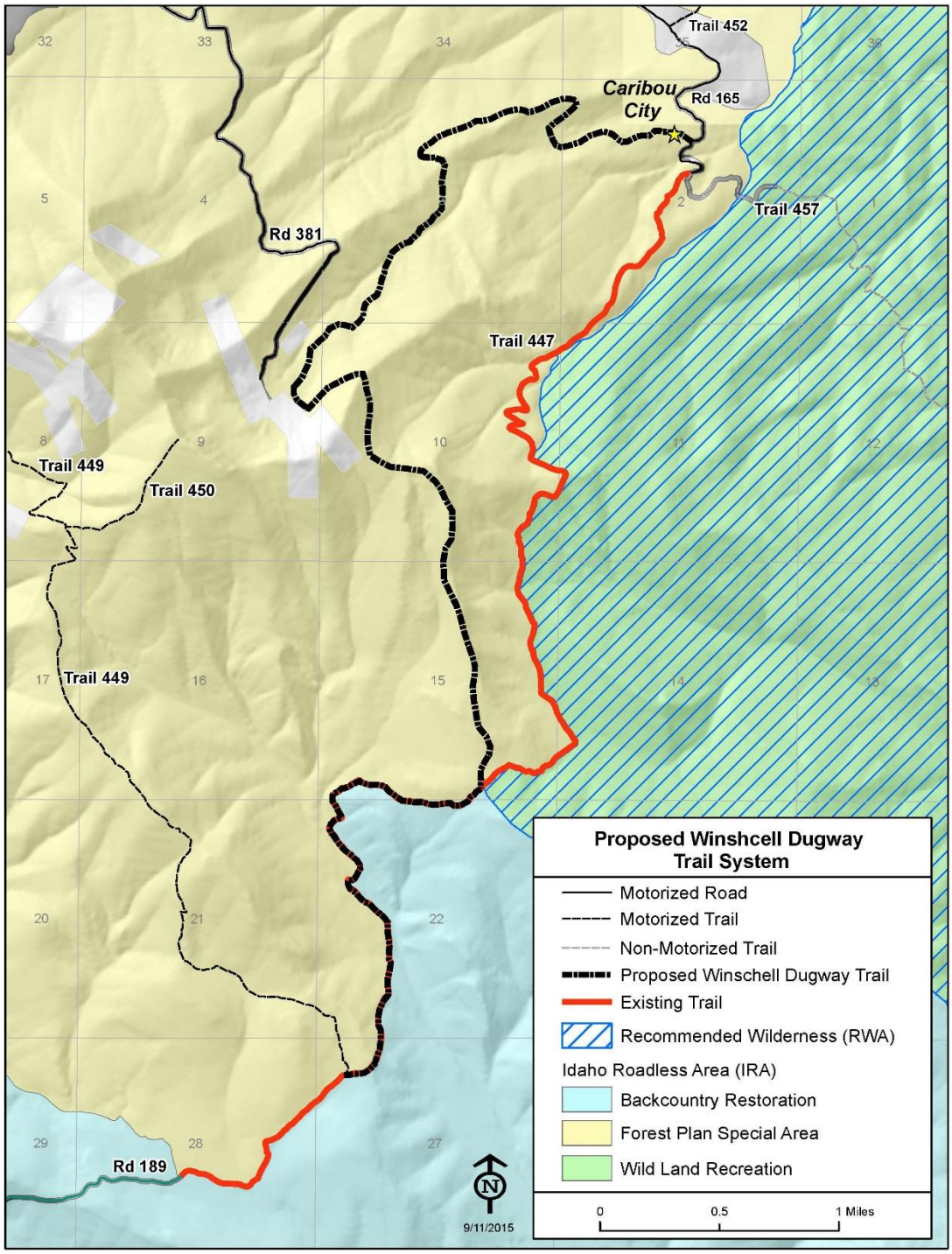

Figure 3: Inventoried Roadless Area designations in Project Area.

Project History

In July 2012, a lawsuit was filed against the Forest Service challenging the approval of the Winschell Dugway ATV Trail System Project (hereafter referred to as the Project). In 2014, the United States District Court for the District of Idaho issued an Order on Motions for Summary Judgement (hereafter referred to as "Court Order"). The Court Order remanded the Winschell Dugway Trail System Decision Notice and Finding of No Significant Impact to the FS to further evaluate the effects of the atv trail on the recommended wilderness area.[1] The Court Order provided the following summary of the factual and procedural background leading up to the March 31, 2014 decision:

In August 2007, the Forest Service mailed a notice to interested parties seeking comments on the Project. In 2011, the Forest Service published an Environmental Assessment for the Project and issued a Decision Notice and Finding of No Significant Impact. The Greater Yellowstone Coalition (Coalition) administratively appealed the Forest Service's approval of the Project. After consideration, the Appeal Deciding Officer reversed the decision, stating that the Project record did not "clearly show that the project is consistent with the Forest Plan."

In January 2012, the Forest Service published an updated Environmental Assessment for the project and the Decision Notice and Finding of No Significant Impact was issued in February 2012. The Coalition administratively appealed the Decision Notice, which ultimately was affirmed by the Appeal Deciding Officer with direction to "not proceed with ground disturbing activities covered under the Decision Notice and Finding of No Significant Impact until the final location of (a not precisely located 0.5 mile portion) the trail is identified and laid out on the ground." The Appeal Deciding Officer also recommended that the Forest Service "conduct and document an Interdisciplinary team sufficiency review of this final location to determine whether it changes the effects disclosed."

As directed by the Appeal Deciding Officer, the Forest Service field-verified the final trail location for the 0.5 mile segment of trail. The Forest Service found that "this section of trail will traverse some steep, but stable, mountain slopes along the corridor of the old roadbed…" The Forest Service determined that "the current range of effects is within the scope of the effects disclosed in the previous analyses,…revision of the EA is not necessary."

The Coalition contended that the Forest Service failed to adequately disclose and discuss the effects of the proposed action in the revised (2012) Environmental Assessment. The Coalition further claimed that the inadequate disclosures led to the Forest Service's failure to prepare an EIS, a decision it argued was arbitrary, capricious, and not in accordance with the law. The Coalition sought an injunction to prevent the Forest Service from proceeding with the Project and asked that the Forest Service be ordered to withdraw the Project's Environmental Assessment and Decision Notice.

In March 2014, the Courtremanded the Winschell Dugway project to address deficiencies in the project analysis. The decision stated:

> *"although the Forest Service did consider some other potential impacts to the RWA in the studies contained in the record, it did not analyze the potential sight*

[1] Greater Yellowstone Coalition v. U.S. Forest Service, Case No. 4:12-cv-00384-REB (D. Idaho 2014).

> *and sound impacts of the Project, nor does the EA recognize a potential impact on the RWA (because the trail was not located in the RWA). Instead, the EA contains mostly conclusory statements. Even coupled with the supporting studies and other documents in the record about the area retaining its potential for wilderness designation, there is a void in the EA with respect to the analysis and details supporting the conclusions that there will be no harmful impacts to the RWA from the trail."*

In February 2016, the Forest Service initiated an EIS to address the deficiencies in the project analysis.

Purpose and Need for Action

The purpose of this project is to respond to outside public interest to provide a motorized trail opportunity from Morgan Meadows to Caribou City allowing forest visitors to experience the historic mining history of the area.

Relationship to the Revised Forest Plan

The 2003 Revised Caribou Forest Plan (RFP) sets forth direction for managing the land and resources of the forest. The desired conditions for the project are based on the objectives, goals, standards, and guidelines outlined in the RFP. This analysis tiers to the Forest's Final EIS and RFP, as encouraged by 40 CFR 1502.20. The RFP was derived from an interdisciplinary process with public and community involvement. The RFP uses prescription areas to allocate uses and emphasize resource priorities.

Management Direction and Guidance

The project area includes twomanagement prescription areas as described in the RFP (USDA, 2003), the Caribou Mountain Special Emphasis Area, 2.1.4 (b) (pages 4-28 -30) and Aquatic Influence Zone, 2.8.3 (pages 4-45 -53). ManagementPrescription 2.1.4 (b)applies to Caribou Mountain, a unique historical area. Management is focused on allowing forest visitors to experience the mining history of the area in a roaded natural to semi-primitive motorized setting. Evidence of past and current mining activities such as ditches, tailings, piles, and buildings are visible. This area provides a spectrum of recreational opportunities in a natural setting. The amount of human activity varies, depending upon your location.This area emphasizes unique opportunities such as interpretation of mining history and recreational gold panning. Management in 2.8.3 emphasizes the restoration and maintenance of the health of the aquatic influence zones.This action responds to the goals and objectives outlined in the RFP (USDA, 2003). The purpose and need for this project are consistent with the Forest's goals, standards, guidelines, the objectives found in Chapter 4 of the RFP, and the Caribou Travel Plan Revision (USDA-FS, 2005).The relevant desired future conditions, goals, standards and guidelines are listed in Table 1 below.

Table 1: Summary of Forest Plan Direction Relevant To Decision

Resourceand Desired Future Conditions	Forest Plan Page Number	Standards, Guidelines and Goals Pertinent to This Project
Soils Soil quality, productivity, and hydrologic function are maintained and restored where needed. Long term soil productivity is sustained and meets future land needs. (DFC) Soils have adequate protective cover, adequate levels of soil organic matter (litter), and coarse woody materials for long-term nutrient cycling. Physical, chemical, and biological processes in most soils function to sustain the site. (DFC)	3-5	• Landtypes identified as being unstable or marginally unstable in the Caribou National Forest Soil Resource Inventory shall be ground verified prior to soil disturbing activities to determine the capability of the land to sustain resource development activities including road construction. (S) • Suitability for resource management activities shall be disclosed in the site-specific analysis. (S) • On land types where landslides or landslide prone areas have been identified, a site-specific analysis shall be conducted to ensure project implementation is compatible with desired future conditions. (S) • Resource developments and utilizations should be restricted to lands identified in the Soil Resource Inventory as being capable of sustaining such impacts. (G)
Watershed and Riparian Resources Watersheds provide infiltration, retention, and release of water appropriate to soil type, vegetation, climate and landform. (DFC) Watersheds provide a well-distributed pattern of nutrients and energy as well as diverse age-classes of vegetation that contribute to watershed health. (DFC) Riparian areas have a range of vegetative structural stages that are at, or moving toward, a properly functioning condition, have features necessary to promote stable steam channels, provide diverse habitat conditions for both aquatic and	3-15 to 3-16	• Maintain or restore water quality to a degree that provides for stable and productive riparian and aquatic ecosystems within the capability of the system (goal). • Aquatic habitat provides for species viability of all native and desired nonnative vertebrate species on the Forest (goal). • Not more than 30 percent of any of the principal watershed and/or their sub-watersheds (6^{th} HUC) should be in a hydrologically disturbed condition at any one time (G).

terrestrial wildlife species and deliver clean water in support of the Clean Water Act and Safe Drinking Water Act. (DFC)		
Noxious Weeds and Invasive Plant Species The introduction and spread of noxious weeds is contained, and ecologically sound methods of controls are applied across the Forest. New infestations of noxious weeds are rare across the landscape and existing large infestations are slowly declining. (DFC)	3-20	• Noxious weeds shall be aggressively treated throughout the Forest, unless specifically prohibited, following the Caribou Noxious Weed Strategy. Using Integrated Weed Management, methods of control and access shall be consistent with the goals of each prescription area. (S) • Monitor, as needed, disturbed areas, such as landings, skid trails, roads, mines, burned areas, etc., for noxious weeds or invasive species and treat where necessary. (G)
Wildlife The Forest provides habitat that contributes to state wildlife management plans. (DFC) Forest management contributes to the recovery of federally listed threatened, endangered, and proposed species and provides for conditions, which preclude sensitive species from being proposed for federal listing. (DFC)	3-24 and 4-29	• In project analyses affecting the habitats listed below, assess impacts to habitat and populations for the following management indicator species: -Grassland and open canopy sagebrush habitats – Columbian Sharp-tailed Grouse -Sagebrush habitats – Sage Grouse -Mature and old forest habitats – Northern Goshawk • Survey for the presence of sensitive species if suitable habitat are found within a project area, a minimum of once prior to or during project development. (G) • Public, workforce, and contractor safety shall be considered and provided for in selecting the arrangement of retained snags and trees. (S) • Snags with existing cavities or nests shall be the priority for retention. (S) • Snag height shall be 15 feet or greater for all forest types. (S) • Strive not to disturb or destroy existing nests, whether active or inactive. (G) • Activities and developments should be designed to minimize conflicts with bald eagle

		wintering and migration habitat. (G) • Wildlife biodiversity is maintained or enhanced by managing for vegetation and plant communities within their historical range of variability. (g) • Maintain multiple vegetation layers in woody riparian habitats, that are stable or increasing with all ages classes (seedlings, young plants, mature and decadent) represented to support native bird communities and other wildlife. (g) • Maintain, and where necessary and feasible, provide or habitat connectivity across forested and non-forested landscapes. (g) • Biodiversity is maintained or enhanced by managing for a diverse array of habitats tied to natural process occurrence and distribution of plant communities. (g) • If and when wolves are de-listed, they will be managed in accordance with approved state management plans. (S) • Within 15 miles of all known Peregrine Falcon nest sites, prohibit all use of herbicides and pesticides which cause egg shell thinning as determined by risk assessment. (S) • Within a 3,600 acre area around all known boreal owl nests sites, maintain over 40% of the forested acres in mature and old age classes. (G)) • Within a 1,600 acre area around all known great gray owl nest sites, maintain over 40% of the forested acres in mature and old age classes. (G) • Provide for vegetation buffers of at least one sight distance around big game concentration/use areas, such as wallows and mineral licks. (G) • Provide for security or travel corridors near created openings. (G)

		• Where summer or fall habitat conditions, including security areas, are identified as a factor in not meeting State Population objectives, work with State wildlife management agencies to address the issues. (G) • Cooperate with other state and federal agencies and private landowners to survey, inventory, and manage habitats for sage grouse and Columbian share-tailed grouse. (S) • Ensure habitats in the Tincup Creek drainage and other known toad breeding locations are managed to maintain or improve the existing population and distribution of western toads. (G) • Maintain amphibian habitats when developing and modifying springs and wetlands. (G) • Stands of mature trees (including snags and dead-topped trees) should be maintained next to wet meadows. (G) • Allow wildlife habitat manipulation where it maintains or enhances the values associated with the special emphasis area. (S) • Snag habitat for woodpeckers shall be allowed to fluctuate with natural disturbance processes (fire, insects, and disease). (S) • Site-specific areas may have snags removed for human safety and other resource management needs. (G)
Recreation People visiting the National Forest enjoy a broad range of recreation opportunities amid natural settings. Recreation experiences and settings meet public expectations of quality, variety, while complimenting other resource objectives. (DFC)	3-39 to 3-40	• Developed and dispersed recreation facilities, access, and programs are consistent with the desired ROS setting and other resource goals of the area in which they are located; (goal) • Environmental education and interpretation is provided; (goal) • Projects should be planned and implemented to meet the Recreation Opportunity Spectrum (ROS) as depicted on the Forest

		ROS map (G).
Scenic Resources The scenery of the Forest reflects both natural and modified appearing landscapes. (DFC)	3-40	• Provide quality settings for a wide range of recreation opportunities; (goal)
Transportation – Roads, Trails and Access Transportation system provides access to the Forest to meet planning and management goals; is safe, environmentally sound, and is responsive to public needs and affordable to manage and maintain; the Forest provides a variety of road and trail opportunities, including motorized and non-motorized experiences. (DFC)	3-36 to 3-38	• Forest roads and trails are managed to maintain or improve watershed condition; (goal) • Forest transportation system is developed and maintained at the minimum level necessary to effectively and efficiently manage natural resources, provide user access, protect capital investments, provide for user safety and protect the environment; (goal) • Open Motorized Route Density (OMRD) shall not exceed the levels identified on the Plan OMRD map. (S) • Minimize construction of new transportation routes, evaluate existing routes, and reconstruct or relocate those routes not meeting management goals; (G) • The construction of new or maintenance of existing, motorized and non-motorized access routes should be consistent with the ROS class in which they are located. (G) • Protection measures for forest system trails should be included in management activity plans and authorizations. (G) • Operations, maintenance and rehabilitation of existing trails should be the priority over new construction. (G) • Motorized use is allowed on designated roads and trails during the snow free season under prescription 2.1.4 (b)
Heritage Resources	3-41	• Cultural resources inventories shall be conducted in consultation with the Idaho State Historic Preservation Office, Local Native

		American Tribes, and interested individuals or organizations likely to have knowledge or interest in the historic properties in the area. (S) • Provide interpretive sites to enhance visitor understanding of the area. (G)

(DFC) – Desired Future Condition, (S) – Forest Plan Standard, (G) – Forest Plan Guidelines, and (goal) – Forest Plan Goal

Idaho Roadless Area Management

Roadless area management in Idaho is defined by management classifications as part of the Idaho Roadless Area Management Rule (36 CFR 294). The project is located inthe Caribou City Roadless Area and is classified asa Forest Plan Special Area. Appendix Q of the Idaho Roadless Area Management FEIS (USDA, 2008) explains that the management direction in the Idaho Roadless Rule would not apply to those areas that are listed as Forest Plan Special Areas and that these areas would be managed according to management direction in the forest plans. Further, "the final rule does not provide direction on where and when off-highway vehicle use would be permissible and makes clear that travel-planning related actions should be addressed through travel management planning and individual forest plans"(2008).

Travel Plan

Road and trail management and snow season travel were determined by the Caribou Travel Plan Revision EIS and decision in 2005. The Record of Decision for the Caribou Travel Plan Revision identified that,due to construction and maintenance concerns, the Winschell Dugway would not be managed as a system trail and that to bring the route to trail standard would require additional public involvement and analysis (USDA - FS, 2005).

The Forest Service Travel Management Regulations (36 CFR 212) direct that when designatingtrails on National Forest System lands for motor vehicle use, the responsible official shall consider effects on natural and cultural resources, public safety, provision of recreational opportunities, access needs, conflicts among uses of National Forest system lands, the need for maintenance and administration, and the availability of resources for that maintenance and administration (36 CFR 212.55 (a)).

In addition to the information listed above, 36 CFR 212.55 (b), requires that the responsible official also consider effects on the following, with the objective of minimizing:

1. Damage to soil, watershed, vegetation, and other forest resources;
2. Harassment of wildlife and significant disruption of wildlife habitats;
3. Conflicts between motor vehicle use and existing or proposed recreational uses of National Forest System lands or neighboring federal lands; and
4. Conflicts among different classes of motor vehicle uses of National Forest System lands or neighboring federal lands
5. Compatibility of motor vehicle use with existing conditions in populated areas, taking into account sound, emissions, and other factors.

A discussion of these criteria is included in Appendix A of this document.

Proposed Action

This section provides a summary of the proposed action. A more detailed description of the proposed action can be found in Chapter 2 of this document.

The proposed action would establish a motorized ATV trail from Morgan Meadows to Caribou City. The proposed action comes from planning efforts that have occurred since 2007. This alternative would construct / reconstruct approximately 8.0 miles of trail as a motorized ATV trail.

The proposed action would incorporate all design criteria and best management practices as outlined in Chapter 2 of this document.

Decision Framework

Given the purpose and need, the deciding official reviews the proposed action, the other alternatives, and the environmental consequences in order to make the following decisions:

- Whether or not to construct and reconstruct a motorized trail from Morgan Meadows to Caribou City.
- If a motorized trail is constructed, the decision would also include the selection of a route location (the proposed action or alternative 3).

Public Involvement

The Notice of Intent (NOI) was published in the Federal Register on February 17, 2016. The NOI asked for public comment on the proposal from February 17 – March 18, 2016. In addition, as part of the public involvement process, the agency mailed scoping letters to the Soda Springs Ranger District Mailing list. Information about the project was also posted to the Caribou-Targhee project page and an article was published in the Caribou County Sun on March 3, 2016.

Using the comments received, the interdisciplinary team developed a list of issues to address, (see *Issues* section).

Issues

Issues serve to highlight effects or unintended consequences that may occur from the proposed action and alternatives, giving opportunities during the analysis to reduce adverse effects and compare trade-offs for the decision maker and public to understand. Issues are best identified early in the process to help set the scope of the actions, alternatives, and effects to consider. Information from public involvement and internal scoping was considered to determine if any concerns were raised relevant to the decision.

Issues that were included in this analysis are effects to soils, water quality, fish habitat and aquatic species, roadless areas, recommended wilderness areas, recreation, wildlife, and vegetation.

Issue 1: Soils
Construction, reconstruction, and use of trails within the project area may contribute to mass instability and soil erosion. The two indicators used to compare alternatives for this issue are a discussion of the relative suitability of the landtypes, and acres removed from productivity and dedicated to the travel system.

Issue 2: Water Resources
The proposed action could have adverse impacts to water quality due to sediment delivery and channel stability. Trails located in aquatic influence zones (AIZs) could affect stream functionality and reduce shading and biological diversity. The two indicators for this issue will be the miles of motorized trail within AIZs and the number of new stream crossings for motorized trails.

Issue 3: Fish Habitat and Aquatic Species
The proposed action could have adverse impacts to fish habitat and aquatic species due to sediment load, erosion, and compaction. The two indicators for this issue will be the miles of motorized trail within the aquatic influence zones (AIZs) and the number of new stream crossings for motorized trails.

Issue 4: Caribou City Roadless Area and RWA
The proposed action could have adverse impacts to the Caribou City Roadless Area and the Caribou City Recommended Wilderness Area. The indicators for this issue will be the effects to roadless values and wilderness characteristics and the effects of noise and visuals on the RWA.

Issue 5: Recreation
The proposed action could have adverse impacts to recreation experiences within the project area. The indicator for this issue will be the miles of new motorized trail within the Caribou City IRA.

Issue 6: Wildlife
The proposed action could have adverse impacts on wildlife species and wildlife habitat. The indicators for this issue will be miles of new motorized trail and the changes in Open Motorized Route Density (OMRD) and impacts to FS Sensitive Species.

Issue 7: Rangeland Resources and Noxious & Invasive Plants
The proposed action could have adverse impacts on rangeland resources due to the increase in noxious weeds in the project area. The indicator for this issue will be acres of disturbance.

Other Resources Considered
Concerns for heritage/cultural resources, climate change, threatened or endangered plants, and sensitive plants are not issues that were raised during scoping or which drove alternative formulation. They will be briefly discussed in Chapter 3 under "Other Resources Considered," but will not be analyzed beyond that.

CHAPTER 2. ALTERNATIVES, INCLUDING THE PROPOSED ACTION

Introduction

This chapter describes and compares the alternatives considered for the Winschell Dugway Motorized Trail Project. It includes a description and map of each alternative considered. This section also presents the alternatives in comparative form, sharply defining the differences between each alternative and providing a clear basis for choice among options by the decision maker and the public. This chapter also contains the design features for the project.

Alternatives Considered in Detail

The Forest Service developed three alternatives, including the No Action and Proposed Action alternatives. These alternatives were formulated based on information from public and internal scoping and existing resource information and knowledge. The mileage numbers and map locations represented here are reflective of GIS generated lengths and may not reflect exact distances or locations on the ground.

Alternative 1

No Action

Under the No Action alternative, a motorized route would not be created from Morgan Meadows to Caribou City.

Alternative 2

The Proposed Action

The proposed action would establish a motorized ATV trail from Morgan Meadows to Caribou City. The proposed action comes from planning efforts that have occurred since 2007. This alternative would construct / reconstruct approximately 8.0 miles of trail as a motorized ATV trail. The trail would follow ATV Trail #449 from Morgan Meadows to the Tincup Creek drainage. From Tincup Creek the trail would go to the west of Jackknife Basin and follow along a ridgeline to an old gold exploratory road where it would descend into the Bilk Creek drainage. After crossing Bilk Creek, it continues up the ridgeline between Anderson and Bilk Creek and then continues along Bilk Creek and on to Caribou City. The trail would also include a connector that would tie the new motorized trail to existing Road 381 (Robinson Mine Road).

The route would require the installation of ATV bridges at five stream crossings; on Bilk Creek (3), Tincup Creek (1) and on an unnamed tributary to Tincup Creek (1).

For the purposes of this project new construction is building a trail where no trail or road previously existed. Reconstruction is improving an old or degraded road or trail prism to current trail standards.

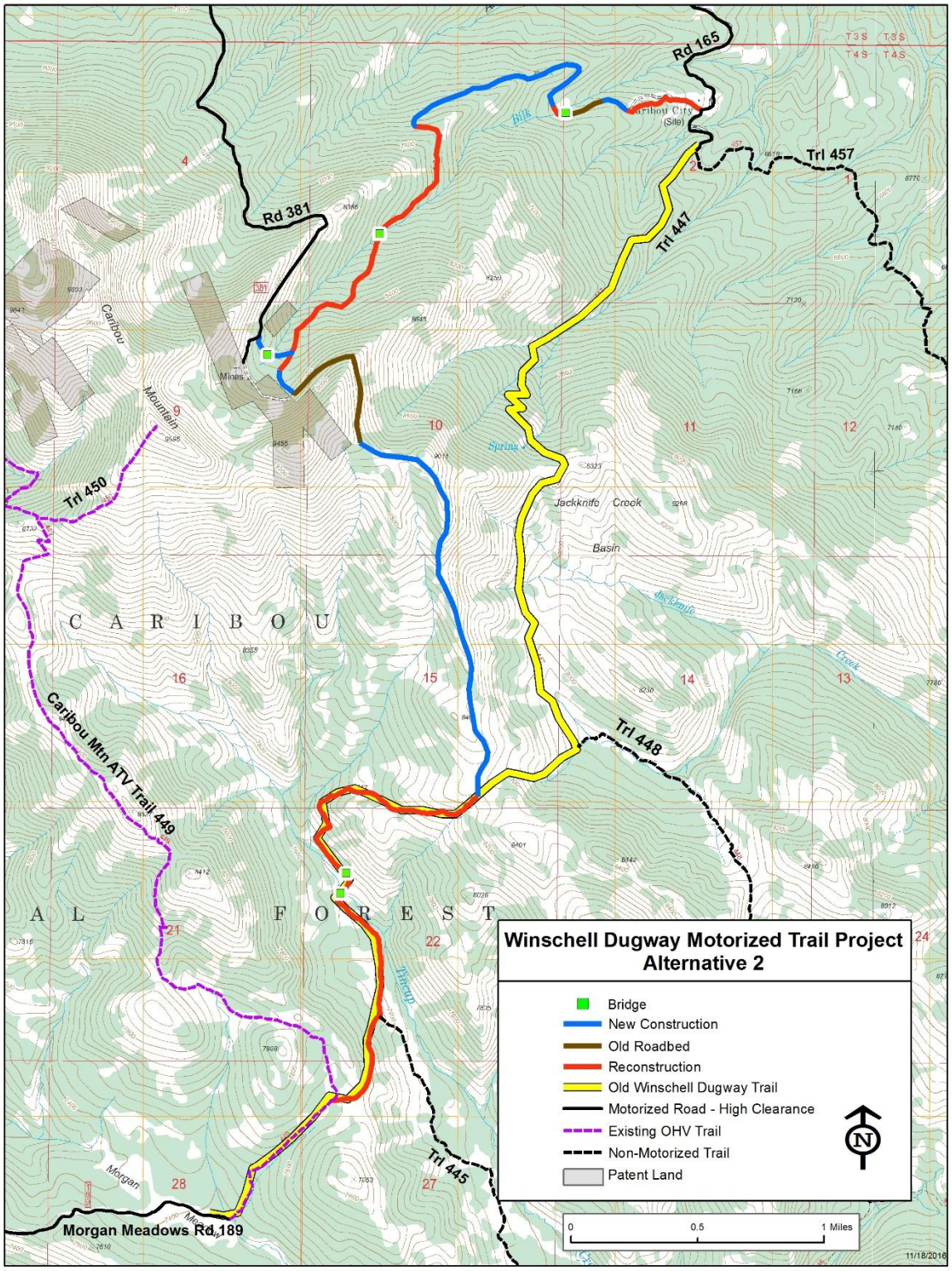

Figure 4. Winschell Dugway Motorized Trail Project – Alternative 2 Map.

Alternative 3

This alternative would establish a motorized ATV trail from Morgan Meadows to Caribou City by using existing trails and roads and constructing / reconstructing approximately 3.0 miles of new trail. The route would start at Morgan Meadows and follow Caribou Mountain ATV trail (#449) to the North Fork Eagle Creek Trail (#451). The route would then follow Barnes Creek Road (#188) to Road #381 (Robinson Mine Road), where the route would tie into the new motorized trail. This route would start by following an abandoned mining road that crosses Bilk Creek and would follow the ridgeline between Anderson and Bilk Creeks. It would then continue along Bilk Creek and on to Caribou City.

This route would require the installation of ATV bridges at three stream crossings on Bilk Creek.

For the purposes of this project, new construction is building a trail where no trail or road previously existed. Reconstruction is improving an old or degraded road or trail prism to current trail standards.

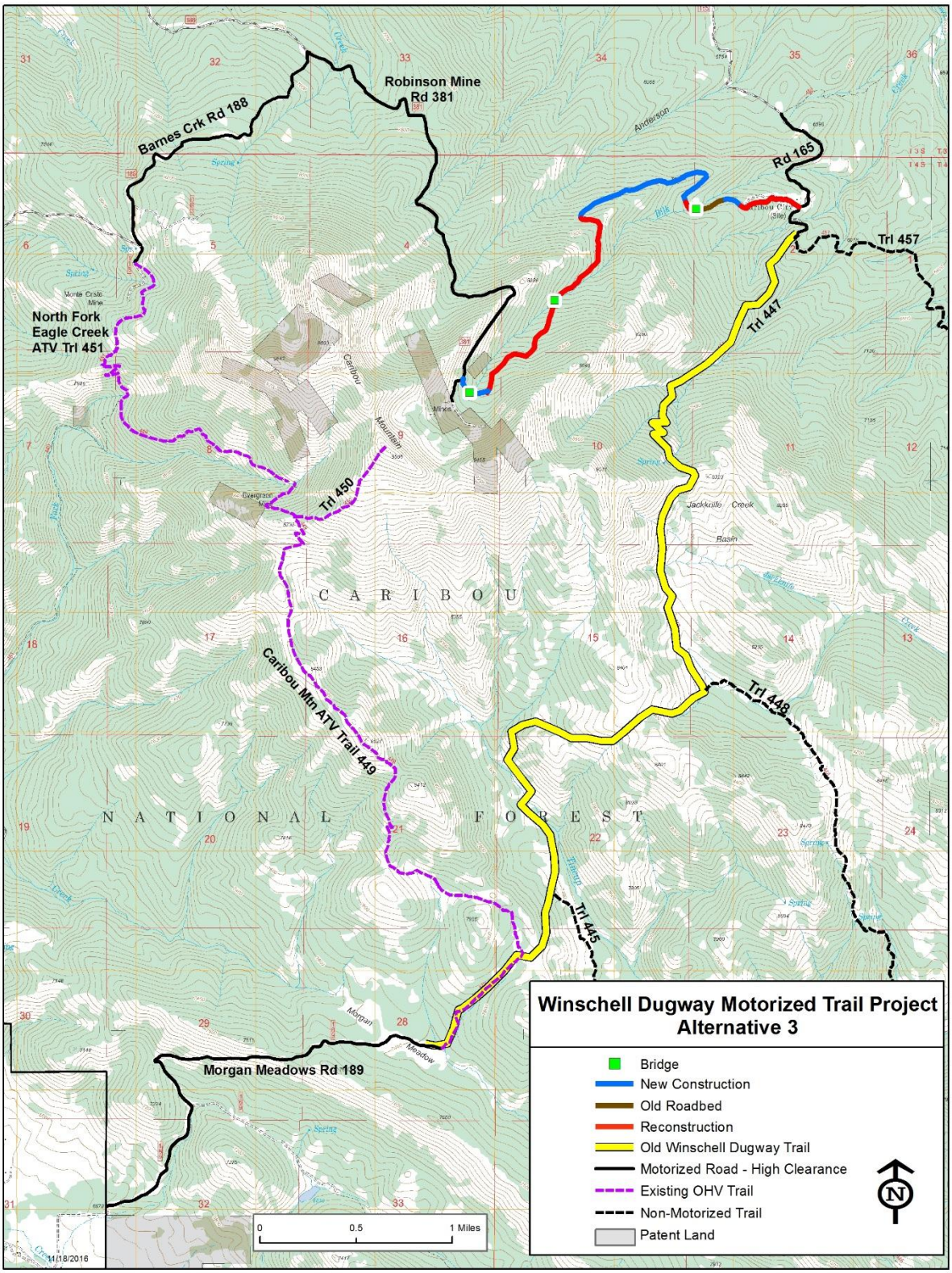

Figure 5. Winschell Dugway Motorized Trail Project – Alternative 3 Map.

Features Common to All Action Alternatives

County Agreement

Bonneville County and the Forest Service will sign an agreement for the Winschell Dugway Trail that outlines the roles and responsibilities for the project.

Bonneville County will be responsible for:

- All construction, reconstruction and maintenance of the route; and
- Informing the Forest Service of any illegal user created trails that are identified during trail maintenance activities.

The USFS will be responsible for:

- Design, trail layout and flagging the location of trail; and
- Yearly inspections of the trail and bridges for safety and maintenance issues. These inspections will be completed by July 1st(weather permitting) and Bonneville County will be informed of the work needed and time frame to complete the work.

All construction, reconstruction, and maintenance will be to Forest Service standards and must be approved by the Forest Service prior to starting any work. Examples of trail maintenance may include but are not limited to removing tree downfall from the trail, maintaining drainage structures to keep water off the trail, maintain trail outslope and width, and implementation of EDDR techniquesto control noxious weeds.

Maintenance and safety issues would be addressed before the public is allowed to use the trail. If the trail and bridges are not maintained to Forest Service standards, the Forest Service may close the trail and bridges.

Design Features and Best Management Practices Common to All Action Alternatives

The Forest Service developed the following measures to be used as part of all of the action alternatives. Following these measures is a list of required monitoring for the project.

Trail Design Features:

Designed Use **ALL-TERRAIN VEHICLE***		**Trail Class 2**	**Winschell Motorized Trail**	**Rationale and Design Details**
Design Tread Width	Single Lane	48"-60"	same as Class 2	Single lane widths will be on slopes <20%. For user safety, wider trail tread, up to a double lane width, will be built on steeper slopes. Turnouts for passing will also be constructed.
	Double Lane	96"	same as Class 2	
	Structures (minimum width)	60"	same as Class 2	
Design Surface	Type	Native, with limited grading. May be continuously rough. Sections of soft or unstable tread on grades <5% may be common and continuous.	same as Class 2	
	Protrusions	<= 6"; may be common or continuous	same as Class 2	
	Obstacles (maximum height)	12"; may be common or placed for increased challenge	same as Class 2	
Design Grade	Target Grade	~~10-25%~~	10-12%	Design grade was reduced based on the potential for erosion due to the soil textures in the project area.
	Short Pitch Maximum	~~35%~~	25%	

	Maximum Pitch Density	~~20-40% of trail~~	5-10%	
Design Cross Slope	Target Cross Slope	~~5-10%~~	2%	Design cross slope reduced to increase user safety.
	Maximum Cross Slope	~~15%~~	5%	
Design Clearing	Height	~~6'-7'~~	10'	Clearing height increased to make the trail more accommodating for horseback riding.
	Width	60"; some light vegetation may encroach into clearing area	same as Class 2	
	Shoulder Clearance	0"-6"	same as Class 2	
Design Turn	Radius	6'-8'	same as Class 2	
Design Drainage			50'-100'	Drainage dips and grade reversals will be the primary techniques for managing water.

* Table adapted from FSH 2309.18 Chapter 20 23.22 Exhibit 01

Table 2. Design Criteria and Best Management Practices Common To All Action Alternatives.

Additional Design Criteria:

- During construction, to maximize effectiveness, erosion control measures must be in place and functional prior to seasonal precipitation or runoff. Drainage structures will be built as the trail is built to minimize erosion (Region 4 Soil and Water Conservation Practices Handbook FSH 2509.22 Practice 15.03).
- Scheduling construction operations during periods when the probabilities for rain and runoff are low is an essential element of effective erosion control (Region 4 Soil and Water Conservation Practices Handbook FSH 2509.22 Practice 15.04.)
- Trail bridge approaches drain away from stream (elevated bridge deck) and ATV trail drainage spacing assumes trail tread is out-sloped from wheel tracks.
- Bridge abutments for all bridges will be placed outside of the bankfull width to avoid channel constriction and maintain proper hydrologic function of the stream.

- Trails will be designed to cross the AIZ riparian areas as perpendicular as possible and where feasible, drainage structures will be installed above stream crossings to prevent sediment from entering streams.
- Minimize side-casting on steep side-slopes outside the AIZ to generally less than 4'.

Aquatic Influence Zones

- When working in AIZ's remove equipment and machinery from the vicinity of AIZ's prior to refueling, repair and maintenance.
- No storing fuels, lubricants or hydraulic fluid within AIZs.
- Work within the high water mark will be done during base flow conditions and within approved instream work windows. The instream work window for the South Fork Snake and all tributaries is September 15 – October 31.
- During trail bridge construction, equipment access to bridge locations would be via the trail system. No temporary roads will be constructed.
- The scale of disturbance within the AIZ will be minimized to the extent practical. Weed free mulch, straw wattles, slash and native seedling will be placed on disturbed areas (at the direction of the district hydrologist) within the AIZ's to ensure potential sediment delivery to streams is minimized to the full extent possible.
- Existing trail fords, on perennial streams, that are abandoned due to trail crossing relocation will be rehabilitated to promote vegetative recovery and reduce erosion.Rehabilitation efforts will be guided by either a hydrologist or fisheries biologist.
- Trees felled during trail construction will remain on site to ensure woody debris objectives are met and desired AIZ attributes maintained. Where necessary, some trees may be relocated to deter motorized use off the designated trail route.
- Reduce side-casting to the bare minimum within the AIZ, where unavoidable limit side-cast slopes to less than 1' long within 50' of water/wetland, limiting them to 2' elsewhere in the AIZ.
- Armor and/or over-seed all side-cast slopes in the AIZ at least 20 lbs/acre and rake in all seed.
- Do not permit disposal of excavated material (fill) in the AIZ other than bridge abutments.
- Do not permit raising elevation of trail or widening trail within the AIZ to dispose of excess fill.
- Construct trail bridge abutments of sufficiently well-graded rocky material so that the tread will not rut or erode when wet. Do not include logs, slash or any other organic material.
- Armor sides of bridge abutment fills with a sufficient layer of rocky material so they cannot erode and are not inviting for vehicles to use as "jump humps".

Archeology

- Archeological surveys will be completed in compliance with the National Historic Preservation Act and other cultural resource protection laws in consultation with the Idaho State Historic Preservation Office.
- Trail construction will avoid any identified historic properties.

Wildlife

- Site specific surveys for Northern Goshawk along the trail corridor will be completed prior to implementation. If any new nests and/or territories are found that could be impacted by trail construction, appropriate mitigation measures will be implemented. Mitigation measures could include delayed project implementation and/or trail reroutes.
- Surveys for migratory birds will be required prior to ground clearing activities (unless these activities occur when nesting is not expected). Any trees with active nests would be avoided until young have fledged and the nest is no longer active. Trees with large raptor nests or large cavities would be left and the trail location moved to avoid disturbance, if possible. Trees with seasonally constructed active nests (not large raptors) or cavities (woodpeckers) would be avoided until birds have fledged.
- Snags will be left unless their presence results in a safety hazard to the personnel constructing the trail and/or the public using the trail.

Plants

- The Forest botanist will conduct site-specific rare plant surveys in areas to be disturbed. If populations are found, they will be avoided or impacts will be minimized.
- Any reseeding will occur with a mixture approved by the Forest botanist.

Noxious Weeds

- Region 4 Invasive Species Strategy Prevention and Early Detection Rapid Response (EDDR) techniques would be implemented to protect un-infested areas. This includes education and awareness (e.g. invasive species awareness signs at trailhead), and inventory, monitoring, and eradication by trained state certified applicator.

Required Monitoring

This project would require the following monitoring items:

- Early detection and Rapid Response monitoring for invasive plant infestations. As new invasive plant infestations are detected, a quick and coordinated inventory and eradication response would reduce negative environmental and economic impacts.
- Yearly inspections of the trail and bridges for safety and maintenance issues. These inspections will be completed by July 1st (weather permitting) and Bonneville County will be informed of the work needed and time frame to complete the work.

Alternatives Considered but Eliminated from Detailed Study

Federal agencies are required by NEPA to rigorously explore and objectively evaluate all reasonable alternatives and to briefly discuss the reasons for eliminating any alternatives that were not developed in detail (40 CFR 1502.14). Public comments received in response to the Proposed Action provided suggestions for an alternative method for achieving the purpose and need. It was determined that components of the suggested alternative would cause unnecessary environmental harm. Therefore, the alternative listed below was considered, but dismissed from detailed consideration for the reasons summarized below.

Construction of ATV Trail Along The Historic Winschell Dugway Wagon Road

Under this alternative, the route would be constructed and reconstructed from Morgan Meadows through Jackknife Basin and into Caribou City (USDA-FS, 2012). This route was an open jeep trail, but was closed due to resource damage and maintenance concerns prior to the 2002 Travel Map(USDA - FS, 2005). Resource concerns for this route are still valid. Although significant reroutes, designed to comply with the BMPs and design features listed above, could have been planned, the steep headwaters of Bilk Creek funnel snow and ice that would have made maintaining a bridge at that site difficult. Also, it would be challenging to maintain a sustainable trail through the fine-textured soils in Jackknife Basin, and resource concerns with this segment of the trail was likely one of the reasons for the administrative closure(Green, 2016b).

Comparison of Alternatives

This section provides a summary of the effects of implementing each alternative. Information in the table below is focused on activities and effects where different levels of effects or outputs can be distinguished quantitatively or qualitatively among alternatives.

	Alternative 1 (No Action)		**Alternative 2** (Proposed Action)		**Alternative 3**	
	Iowa-McCoy HUC 6	Upper Tincup HUC 6	Iowa-McCoy HUC 6	Upper Tincup HUC 6	Iowa-McCoy HUC 6	Upper Tincup HUC 6
Productive Land dedicated to the travel system (acres)	54	158	63 (+9)	164 (+6)	59 (+5)	161 (+3)
Soil Capability and Suitability	NA		Capable and Suitable		Capable and Suitable	
Noxious Weeds – Potential Acres Infested	0		6.7		4.4	
Amount or Degree of Disturbance, Habitat Loss, and/or Fragmentation (approximate miles of motorized trail)	0		8		3	
Amount or Degree of Disturbance, Habitat Loss, and/or Fragmentation (Open Motorized Route Density)	1.1 mi/mi^2		1.3 mi/mi^2		1.2 mi/mi^2	
Effects to Forest Service Designated Sensitive Species (Determination of Effect)	"No Impact" Determinations for all Forest Service Sensitive Species		"No Impact" or "May Impact Individuals or habitat, but will not likely contribute to a trend towards federal listing or cause a loss of viability to the population or species" for all Forest Service Sensitive Species		"No Impact" or "May Impact Individuals or habitat, but will not likely contribute to a trend towards federal listing or cause a loss of viability to the population or species" for all Forest Service Sensitive Species	
New Motorized Trail (miles)	0		8		3	
Effects to Roadless Values	No Change		The proposed action would not affect the areas suitability for wilderness designation.		The proposed actions would not affect the areas suitability for wilderness designation.	
Effects to Wilderness Characteristics	No Change		The proposed action would not affect the areas suitability for wilderness designation.		The proposed actions would not affect the areas suitability for wilderness designation.	
Visual Effects to the RWA (acres where open motorized route is visible)	19,549 acres		22,132 (+2,583)		19, 837 (+288)	
Increase inNoise Effects to the RWA (decibels)	0		92 – 97 dB		78 – 81 dB	
Number of Stream Crossings	0		5		3	

Miles of Motorized Trail in AIZ	1.31	3.35	2.35

Table 3. Comparison of Effects by Alternative.

CHAPTER 3. AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

This Chapter summarizes the physical, biological, social, and economic environments of the project area and the effects of implementing each alternative on that environment. It also presents the scientific and analytical basis for the comparison of alternatives presented in the alternatives chapter.

In accordance with 40 CFR 1502.21, this EIS incorporates by reference the resource specialist reports in the project record. The specialist reports contain the data, regulatory framework, assumptions, methodologies, maps, references and documentation that the interdisciplinary team relies upon to reach the conclusions of the analysis.

The most relevant scientific data that is available is considered and reviewed for this analysis. The information below (and in the project record) describes the conditions of resources and uses that are anticipated to occur under each alternative.

Direct, Indirect and Cumulative Effects

The effects analysis for each alternative consists of the direct, indirect, and cumulative effects.Direct effects are those caused by the action and occur at the same time and place. Indirect effects are those caused by the action and are later in time or further removed in distance, but are still reasonably foreseeable (40 CFR 1508.8). Cumulative effects are those that result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions (40 CFR 1508.7). Cumulative effects can result from individually minor, but collectively significant, actions taking place over a period of time. Cumulative actions are those actions, which when viewed with past actions, other present actions, and reasonably foreseeable actions, may have cumulatively significant impacts and therefore should be discussed in the same environmental analysis document.

Past, Present and Reasonably Foreseeable Actions

Past, present, and reasonably foreseeable actions are activities that have already occurred, are currently occurring, or are likely to occur in the vicinity of the project area and may contribute to cumulative effects. The past and present activities and natural events have contributed to creating the existing condition, as described under each resource section in this chapter. These activities, as well as reasonably foreseeable activities, may produce environmental effects on issues or resources relevant to the proposal. Therefore, the past present and reasonably foreseeable activities described in the following table have been considered in the cumulative effects analysis for each resource area.

Table 4. Summary of past, present, and reasonably foreseeable future actions considered for cumulative effects analysis.

Actions	Occurrence of Actions: Past (P), Present (C), and Reasonably Foreseeable (RF)	Effects
Livestock grazing	P, C, RF	Livestock have grazed most of the area since the 1870s. Two USFS grazing allotments are within this project area, Caribou Mountain S&G and Eagle Creek/Morgan Meadows S&G .

		Livestock grazing within these allotments is by sheep. Grazing in this area will continue.
Firewood collection; post and pole cutting	P, C, RF	Firewood collection and post and pole cutting has occurred historically within the project area. The level of impacts from these activities can vary depending on the scale, intensity, and concentration of disturbance.
Road Construction, Use, Maintenance, and Decommissioning	P, C, RF	Forest system roads exist within the project area, as well as roads that were closed but have not been decommissioned. The area includes historic mining roads and remnants of historic mining roads from the 1800s. The area has approximately four miles of roads open to motorized use in the summer and are open to snowmobiling in the winter.Forest system roads in the vicinity of the project area include: McCoy Creek Road, Morgan Meadows Road, and Jackknife Road. Roads designated for motorized use by the public are maintained with safety as a high priority. This primarily involves repairing drainage features and clearing of live and down vegetation.
Recreation Activities (motorized and non-motorized trails, hunting, hiking, camping, fishing, snowmobile and other winter activities, cross-country skiing); trail construction and maintenance; Recreation Specialization and new technologies	P, C, RF	Recreation use, including hunting and fishing, hiking, camping, snowmobiling, cross-country skiing, use of motorized trails and non-motorized trails, has and continues to occur. This use is expected to continue and increase as the regional population grows. Recreation specialization and new technologies have and will continue to shape the uses of the project area. There are approximately 11 miles of motorized trails within the project area.
Fire Activities (wildland fire, wildland fire suppression , prescribed burning)	P, C, RF	Natural fires have occurred over time within the project area. Lower elevations of the project area were burned by wildfire in the latter part of the 19th century. A large wildlife occurred in 1988. Sections of dozer lines from this fire are still evident in the Tincup drainage. Wildland fire and wildland fire suppression have shaped plant communities.
Mining, Dredging	P, C, RF	Mining activities have occurred since the late 1860s. Gold and other metals were recovered using hydraulic mining techniques. These activities scarred the landscapes with eroded hillsides, extensive canal works and mining debris.Future gold exploration and mining could occur in accordance with current mining laws.
Caribou Loop Connector Trail Project	RF	The Caribou Connector Trail project is located within the drainage of a small perennial tributary of Tincup Creek. Just under one mile of OHV trail would be constructed adjacent to Highway 34.
Natural Events	P, C, RF	Drought cycles, snow avalanche, and soil slumps have occurred periodically within the project area.

Soil Resources

This section discusses the components of the soil resource that could be affected by the proposed activities. This information is extrapolated directly from the Soil Resources Specialist Report *(Green, 2016a)*. The soil resource analysis focuses on soil capability, soil suitability, and productive land base. The analysis identifies the existing soil resource condition and discloses the potential effects on soil resources from the proposed activities.

Issues

Construction, reconstruction, and use of trails within the project area may contribute to mass instability and soil erosion. The two indicators used to compare alternatives for this issue are a discussion of the relative suitability of the landtypes, and acres removed from productivity and dedicated to the travel system. Areas of natural mass instability on Caribou Mountain was considered as part of the site-specific proposed trail location. Comments received during public scoping require that effects to the soil resource be fully analyzed, but neither existing resource condition nor anticipated effects are alternative driving issues.

Resource Indicators and Measures

Resource indicators and measures were developed based on FSM 2550 guidance and examples of how to evaluate the effects of the proposal on soil productivity and function. The following indicators provide a basis for comparing the direct and indirect effects of the project alternatives to the soil resource. The productive land base indicator will also be used in the cumulative effects analysis.

Table 5. Soil Resource indicators and measures for assessing effects.

Resource Element	Resource Indicator	Measure	Used to address: P/N, or key issue?	Source
Productive land base	Productive land dedicated to the travel system	Acres	No	FSM 2550
Soil Resource	Soil Capability and Suitability	Qualitative analysis	Yes	Forest Plan S&G

Methodology

FSM 2550, section 2551.4, provides direction on methods to determine soil quality. To be consistent with direction given, both quantitative and qualitative methods were used for this soil resource assessment and are described in detail where they are cited and used in this analysis.

Information Sources

Baseline resource information is from the Caribou National Forest Soil Survey (Soil Survey Staff, Natural Resources Conservation Service, United States Department of Agriculture. Web Soil Survey. Available online at http://websoilsurvey.nrcs.usda.gov/. Accessed [05/06/2016]). This survey provides information on the types and distribution of soil resources within the project area, and includes descriptions of soil and site properties relevant

to management activities. The Caribou Soil Survey (1990) was also referenced where Forest Plan standards directed use of this report. The proposed trail locations were also observed in the field, with a focus on observing soil properties and

identifying visual evidence of mass instability. A complete list of applicable scientific literature is provided in the References section as well as copies in the project record.

Incomplete and Unavailable Information
Available soil resource information, supplemented by on-site data specifically collected for this project, is adequate for this analysis. Incomplete information includes an inventory of historic mining roads with the Caribou City area that is within the project HUC 6 watersheds.

Spatial and Temporal Context

The soil resource affected by this proposal is the width of trail disturbance along the length of the trail. The effects of the project are long-term, with the assumption being that once a motorized trail is built and added to the travel system, it will remain for as long as Bonneville County is able to fulfill maintenance obligations as described in an agreement between the Forest and the County.

Direct and Indirect Effects Boundaries
The spatial boundaries for analyzing the direct and indirect effects to the soils is a 15-foot wide corridor along the trail. This boundary was used because the design width of the trail is 4-5 feet, with segments up to 8 feet in width. Considering cut and fill and drainage features, the average disturbance will be bounded by a 15 foot corridor. The temporal boundaries for analyzing the direct and indirect effects are described in terms of short-term erosion during construction lasting 1-2 seasons, and long-term dedication of the land to the travel system, which is assumed to be longer than 20 years. These timeframes were selected because of the likelihood of the long-term existence of the trail, but also to account for the possibility of closure if County priorities were to change in the future.

Cumulative Effects Boundaries
The spatial boundaries for analyzing the cumulative effects to the soils are the HUC 6 watershedsbecause these are small watersheds and are consistent with effects boundaries for the water quality and hydrology analyses. The Iowa-McCoy creek HUC 6 is 13,545 acres and the Upper Tincup HUC 6 watershed is 25,560 acres.The temporal boundaries for analyzing the cumulative effects are greater than 20 years due to the anticipated permanence of a system trail.

Affected Environment

The proposal is located near Caribou Mountain and is part of the Caribou Range Overthrust Mountains Subsection. The geology is primarily sedimentary, intrusive igneous, and metamorphic rocks such as limestone, siltstone, conglomerate and sandstone that has been modified by geomorphic processes (RFP p. 4-8). The geomorphic processes influencing soil development in the area include fluvial (water driven) processes in drainages, colluvial (gravity driven) slope processes and gravitation landslides, which primarily occur where

water concentrates in geologic formations with documented instability, such as two local mudstone formations, the Wayan, and the Pruess Redbeds (Huntsman and Platt, 1985). Elevation ofthe project is about 6,900 feet to about 9,000 feet, and the project area receives about 26 inches of precipitation around Caribou City, up to about 38 inches of precipitation higher on the mountain. Soil resources in the project areas are described in the Custom Soil Resource Report for Caribou National Forest, Idaho and Wyoming-Winschell Dugway Motorized Trail (2016).

Historic gold mining left road and hydraulic mine spoil disturbances in the area in the 1800's. Most of the mine spoils support trees, but have a reduced productivity compared to undisturbed soils. Some of the historic mining roads were at some point restored to natural contour, but others were simply left to natural processes. Forest system roads and system motorized and non-motorized trails exist within the HUC 6 watersheds. One sheep bedding ground, with historic erosional impacts, exists on a broad ridge in the Upper Tincup watershed. Apart from these long-term effects to soil productivity, the soil resources in the project area HUC 6 watersheds are in near-reference conditions. The resource indicator below includes existing system roads and motorized trails and Tincup Highway that are within the HUC 6 watersheds. These acreages are dedicated to the travel system. Acreage calculations assume a system road has a 30-foot disturbance width, a system motorized trail a 15-foot disturbance width, and the highway a 100-ft disturbance width.

Table 6. Resource Indicators and measures for the existing condition.

Resource Element	Resource Indicator	Measure	Existing Condition	
Productive land base	Productive land dedicated to the travel system	Acres	Iowa-McCoy HUC 6	Upper Tincup HUC 6
			54	158
Soil Resource	Soil Capability and Suitability	Qualitative analysis	NA	NA

Resource Indicator – Capability
Forest Plan standards and guidelines provide direction for the assessment of capability. The standard requires that "land types identified as being unstable… in the Caribou National Forest Soil Resource inventory (SRI) shall be ground verified… to determine capability." This was completed, and the entire route, not just areas identified as potentially unstable, was field verified for capability.

Landslides or Landslide-prone Areas
The road system in the Caribou Mountain area has contributed to landslides on areas prone to mass movement. Road cuts and fills, as well as removal of vegetation, often increase the risk of mass instability (Meeuwig et al, 1976). Slumps have been documented on Forest system roads in the general vicinity of the project area, including the McCoy Creek Road, Morgan Meadows Road, and Jackknife Road. Commonfactors that likely contributed to thesemanagement-induced failures were road cutslopesin the naturally unstable Wayanformation. The Wayan formation was mapped inthe project area, as well as the Preuss Redbedsformation, which can also weather into naturally

unstable landforms (Huntsman and Platt, 1985).Management induced slope failures have not beenobserved on the motorized trails in the area,probably due to the narrower tread and reducedslope cut (Kleinschmidt 2007 field notes). Several miles of existingmotorized trail (trail #608 and #118)were ridden in the fall of 2007 and a cursory assessment of conditions was documented (Kleinschmidt2007 field notes). These trails pass through landforms also identified as unstable in the Caribou NationalForest Soil Resource Inventory, and are in good condition.

Mass stability is the main criteria for capable locations for the proposed trails. Landforms in the projectarea are mapped primarily as unstable or marginally unstable in the Caribou Soil Survey, however, stablelandforms can be found within these landtypes. Two main risk factors for mass instability are evidence ofpast slumps and steep slopes on unstable landforms (Seyedbagheri 1996). Where these risk-factors formass instability were identified during field sampling and analysis, additional site-specific field work wascompleted to plan a route for the new trail that is capable and in compliance with Forest Plan Standardsand Guidelines.

Resource Indicator- Soil Suitability
The qualitative indicators of soil suitability include the soil and site properties within the analysis area that can limit the ease of motorized trail construction and the sustainability of the completed trail. These indicators include silty and sandy loam surface textures, high water tables near streams and springs, and steep slopes. Not all of these limiting soil and site properties occur throughout the entire project area. Details are provided in Appendix A of the Soil Resource Specialist Report in the project file. Poorly suited means that additional design features and/or expense will likely be needed to overcome the naturally limiting features.

Erosion Hazard: The majority of the limitations (depicted in Figure 5 of the soils specialist report) are due to the engineering propertiesof the soil. This limitation is overcome by a reduced design gradeof the motorized trail and appropriately spaced drainage features.

Environmental Consequences

Alternative 1 – No Action

Under Alternative 1, no new motorized trails would be built. No direct, indirect, or cumulative effects to soil resources would occur. Resource indicators and measures would be unchanged from the existing condition.

Alternative 2 – Proposed Action

Direct and Indirect Effects

The proposed motorized system trail, utilizing fragments of existing road prisms, will remove about 12 acres of productive land and dedicate it to the travel system. This is an over-estimate because some of the area is old non-system road that was not previously accounted

for. The construction and reconstruction of old road prisms and cutting new trail will require vegetation removal, soil disturbance, and slope re-shaping. These actions disturb and loosen soils and can lead to erosion and sedimentation (Elliot et al, 2009) which will be minimized by the project design features. Following BMPs that establish effective trail drainage systems and stabilize cut and fill slopes would effectively reduce erosion within several years (Seyedbagheri 1996).

Meeuwig et al (1976) found that natural ground slope and fill slope were important factors that contribute to mass failures. Road cuts undermine upper slopes, increasing the probability of soil movement and mass failure. Several studies in the Idaho Batholith show the erosion and mass failure hazards of building a road on steep slopes (exceeding 45-70%) (Seyedbagheri 1996). These concerns were considered for the 0.5 mile of reclaimed road that is proposed for reconstruction as a motorized trail near the end of the Barnes Creek Road. This area was field-checked for signs of landslides or landslide-prone conditions, and the geologic maps show very steep, but stable mountain slopes, very similar to mountain slope that the Barnes Creek Road traverses just to the north. Some sloughing of the cut-slope may occur, but no landslide hazard is apparent (K. Green, 2012 Field Notes). This route is stable and capable for the proposed motorized trail.

Resource Indicator and Measure 1 – Productive Land Base Dedicated to the Travel System
The land dedicated to the roads and trails within the Iowa-McCoy HUC 6 will increase by about 7 acres; from 54 to 61. In the Upper Tincup HUC 6, acres dedicated to the travel system will increase by 5 acres; from 158-163.

Resource Indicator and Measure 2 – Soil Capability and Suitability
This is a qualitative analysis of soil capability and suitability. The proposed route for this alternative uses less-steep landforms, which have been ground-checked for stability, to the northeast of Caribou Mountain to gain elevation, then climbs a steep timbered slope with multiple switchbacks, and then utilizes existing road prisms, remnants of the mining history, and traverses the steep east face of the mountain. From there, the landscape is still mapped as unstable, but the proposed trail placement keeps to the ridge and shoulder slope, providing a stable location for the trail. The proposed trail crosses a degraded sheep bed ground and joins the old prism of the Winschell Dugway wagon road. The prism has been drained on the switchback, and is in good condition. No failures were identified in the southern portion of the Winschell Dugway. The proposed route is capable and suitable for the proposed trail as modified by the design features/BMPs.

Table 7. Soil Resource indicators and measures for assessing effects, Alternative 2.

Resource Element	Resource Indicator	Measure	Alternative 2	
Productive land base	Productive land dedicated to the travel system	Acres	Iowa-McCoy HUC 6	Upper Tincup HUC 6
			7	5
Soil Resource	Soil Capability and Suitability	Qualitative analysis	Capable and suitable	Capable and suitable

Cumulative Effects – Alternative 2

Past, Present, and Reasonably Foreseeable Activities Relevant to Cumulative Effects Analysis

Cumulative effects are analyzed by HUC 6 watershed. Past effects to soil productivity in the HUC 6 watersheds are roads and trails, as well as roads that were closed but not decommissioned (such that productivity was never restored). Historic gold mining spoil piles and associated disturbances also resulted in dozens of acres of long-lasting reduction in soil productivity. Minor historic sheep bedding grounds also reduced productivity on about 10 acres of the ridge between Tincup Creek and Jackknife Creek (Kleinschmidt 2007 Notes).

Existing roads and trails, as well as fragments of closed non-decommissioned roads are also a present and reasonably foreseeable activity, and are a dedicated use of the soil resource. Small-scale gold mine claims and associated mine plans are expected to periodically be submitted, but modern reclamation guidelines and BMPs result in little to no effects to soil productivity. Other identified past, present and reasonably foreseeable future actions have had/will continue to have unmeasurable/minor effects to soil productivity within the analysis area.

Resource Indicator and Measure 1- Productive Land Dedicated to the Travel System

The Iowa-McCoy Creek HUC 6 watershed is 13,545 acres, which means that the 7 acres of productive land proposed to be dedicated to the travel system will increase the acres dedicated to roads and trails from 54 to 61, which is a minor negative effect to the watershed. The Upper Tincup HUC 6 watershed is 25,560 acres, and the additional 5 acres would increase the total acres dedicated to the travel system from 158 to 163, which will also result in a minor reduction in the productive acres in the watershed.

Table 8. Soil Resource indicator of total acres dedicated to the travel system in Alternative 2 (including all existing system roads and trails within these watersheds).

Resource Element	Resource Indicator	Measure	Alternative 2	
			Iowa-McCoy HUC 6	Upper Tincup HUC 6
Productive land base	Productive land dedicated to the travel system	Acres	61	163

Resource Indicator and Measure 2 – Capability and Suitability

Capability and suitability are site-specific to the proposal, and are not used in the cumulative effects analysis.

Alternative 3

Direct and Indirect Effects

The proposed new motorized trail system, utilizing fragments of existing road prisms, will remove about 8 acres of productive land and dedicate it to the travel system. This is an over-

estimate because some of this acreage calculation is old non-system road that was not previously accounted for. The construction and reconstruction of old road prisms and cutting new trail will require vegetation removal, soil disturbance, and slope re-shaping. These action disturb and loosen soils and can lead to erosion and sedimentation (Elliot et al, 2009) which will be minimized by the project design features. Following BMPs that establish effective trail drainage systems and stabilize cut and fill slopes would effectively reduce erosion within several years (Seyedbagheri, 1996).

Meeuwig et al. (1976) found that natural ground slope and fill slope were important factors that contribute to mass failures. Road cuts undermine upper slopes, increasing the probability of soil movement and mass failure. The proposal was field checked for visual indicators of instability along the proposed route, and none were observed (Kleinschmidt 2007 field notes). This route is stable and capable for the proposed motorized trail.

Resource Indicator and Measure 1 – Productive Land Base Dedicated to Travel System
The land dedicated to the roads and trails within the Iowa-McCoy HUC 6 will increase about 5 acres; from 54 to 59. In the Upper Tincup HUC 6, acres dedicated to the travel system will increase by 0 acres; remaining at 158.

Resource Indicator and Measure 2 – Soil Capability and Suitability
Alternative 3 is a sub-set of the trail proposed in Alternative 2, therefore the land proposed for this alternative is also capable and suitable for the proposal (as modified by the identified BMPs).

Table 9. Soil Resource indicators and measures for assessing effects, Alternative 3.

Resource Element	Resource Indicator	Measure	Alternative 3	
Productive land base	Productive land dedicated to the travel system	Acres	Iowa-McCoy HUC 6	Upper Tincup HUC 6
			5	0
Soil Resource	Soil Capability and Suitability	Qualitative analysis	Capable and suitable	Capable and suitable

<u>Cumulative Effects – Alternative 3</u>
Past, Present, and Reasonably Foreseeable Activities Relevant to Cumulative Effects Analysis

Cumulative effects are analyzed by HUC 6 watershed. Past effects to soil productivity in the HUC 6 watersheds are roads and trails, as well as roads that were closed but not decommissioned (such that productivity was never restored). Historic gold mining spoil piles and associated disturbances also resulted in dozens of acres of long-lasting reduction in soil productivity. Minor historic sheep bedding grounds also reduced productivity on about 10 acres of the ridge between Tincup Creek and Jackknife Creek (Kleinschmidt 2007 Notes).

Existing roads and trails, as well as fragments of closed non-decommissioned roads are also a present and reasonably foreseeable activity, and are a dedicated use of the soil resource. Small-scale gold mine claims and associated mine plans are expected to periodically be submitted, but modern reclamation guidelines and BMPs result in little to no effects to soil productivity. Other identified past, present and reasonably foreseeable future actions have had/will continue to have unmeasurable/minor effects to soil productivity within the analysis area.

Resource Indicator and Measure 1 – Productive Land Dedicated to the Travel System
The Iowa-McCoy Creek HUC 6 watershed is 13,545 acres, which means that the 5 acres of productive land proposed to be dedicated to the travel system will increase the acres dedicated to roads and trails from 54 to 59, which is a minor negative effect to the watershed. No additional acres in the Upper Tincup HUC 6 watershed would be dedicated to the travel system, and the current total of 158 acres dedicated to the travel system would be unchanged.

Table 10. Soil Resource Indicator of total acres dedicated to the travel system in Alternative 3 (including all existing system roads and trails within these watersheds).

Resource Element	Resource Indicator	Measure	Alternative 3	
Productive land base	Productive land dedicated to the travel system	Acres	Iowa-McCoy HUC 6	Upper Tincup HUC 6
			59	158

Resource Indicator and Measure 2 - Soil Capability and Suitability
Capability and suitability are site-specific to the proposal, and are not used in the cumulative effects analysis.

Alternatives considered but eliminated from detailed study

Scoping comments suggested constructing the ATV trail along the historic Winschell Dugway wagon road. Under this alternative, the route would be constructed and reconstructed from Morgan Meadows through Jackknife Basin and into Caribou City. This route was an open jeep trail, but was closed due to resource damage and maintenance concerns prior to the 2002 Travel Map (Caribou Travel Plan FEIS). Although significant re-routes, designed to comply with the BMPs and design features could have been planned, the steep headwaters of Bilk Creek funnel snow and ice that would have made maintaining a bridge at that site difficult and expensive. Also, it would be challenging to maintain a sustainable trail through the fine-textured soils in Jackknife Basin, and resource concerns with this segment of the trail was likely one of the reasons for administrative closure.

Summary

Both alternatives, as modified by the identified list of BMPs/design features, will provide a motorized trail along a route that is stable and relative the proposal and is capable of withstanding the impacts of the proposal. The route design considered the suitability of the soils in the project area, and design features such as reduced design grade of the trail mitigate some of the naturally limiting engineering properties of the native soil material for trail

construction. These are standard practices across the Forest, as many of the existing motorized trails have similar limitations. Alternative 2 removes about 12 acres from the productive land base and dedicates it to the travel system, and Alternative 3 removes approximately 5 acres.

Water Resources

This section discusses the components of the water resource that could be affected by the proposed activities. This information is extrapolated directly from the Hydrology & Riparian Report *(Laprevote, 2016)*. The water quality analysis focuses on sediment delivery and channel stability and the degradation of Aquatic Influence Zone (AIZ) qualities. The analysis identifies the existing water resource condition and discloses the potential effects on water resources from the proposed activities.

Issues

Motorized routes have the potential to affect water quality, streams and wetlands in a watershed. Routes in AIZs can affect stream functionality, reduce shading and biologic diversity. Risks of effects to riparian function are greater when routes are within the AIZ. Stream crossings have the potential to "connect" streams to trails, thus increasing delivery of pollutants to streams.

Resource Indicators and Measures

Resource indicators and measures were developed based on desired future conditions that are outlined in the Revised Forest Plan. The following indicators provide a basis for comparing the direct and indirect effects of the project alternatives to the water and riparian resources.

Table 11. Resource Indicators and measures for assessing effects

Resource Element	Resource Indicator	Measure	Addresses P/N, or key issue?	Source
Water quality	Sediment delivery & channel stability	Number of stream crossings for motorized trails	Addresses hydrology issue	RFP AIZ DFC pg. 4-47
Riparian Function	Degradation of AIZ qualities	Miles of motorized trail in AIZ	Addresses hydrology issue	RFP AIZ DFC pg. 4-47

Methodology

Route miles in the AIZ were calculated using ArcMap 10.3. Spatial data included a GPS line of proposed route (s) developed by the Project Lead and the Forest corporate layer of default AIZ widths. Field visits by J. Laprevote (Hydrologist) were made to compile stream and wetland crossings, stream classifications, and potential wetland areas. A detailed description of these processes is available in the Hydrology specialist report.

Information Sources

Data used in this analysis represents the best available data at the time of analysis. GIS data of hydrology and watershed boundaries are from the Forest corporate layers. Field visits for

this study were made by walking the entire length of the proposed new route once and visiting all stream crossings, most were visited multiple times (Laprevote, 2016).

Incomplete and Unavailable Information

No differing data, viewpoints, or science on hydrology/watershed concerns were brought up during scoping. No data gaps not stated herein were apparent.

Spatial and Temporal Contextfor Effects Analysis
The affected spatial analysis area for hydrologic and riparian effects consists of portions of two HUC-6 watersheds: Iowa Creek and Upper Tincup Creek.

Direct and Indirect Effects Boundaries
The Iowa Creek and Upper Tincup Creek HUC's were selected for the effects boundary because they encompass the area where the anticipated effects are expected to occur. For the HUC6 containing Bilk Creek and Anderson Gulch, the analysis area goes down to where the creeks discharge into the much larger Iowa Creek. This analysis area is expected to contain all areas where any sediment effects from the trail or a creek crossing could be distinguished from the existing condition. For the upper Tincup HUC6, there are no roads below the trail for miles, so in this case it includes all areas draining to an easily defined point limited to an additional 1000 feet of channel downstream. The distance of an additional 1,000 feet of channel downstream comes as the maximum distance sediment from a road (here road is used as a surrogate for a trail) is traceable in channelized flow(Belt, et al., 1992).

Effects of sediment produced by the initial disturbance of trail and stream crossing construction are expected to last less than 5 years (short to medium term) being highest for the first year after construction, then reducing more each successive year as it is stabilized (mostly by vegetation) until after five years all measurable sediment from construction would be stabilized. A much smaller sediment effect occurs from the usage and mere presence of the trail and stream crossings, which would continue for the long term (more than 5 years), lasting as long as the trail and crossings are in place and in use. A pulse of sediment effect from obliteration of the trail would occur (should it be removed at some future point) lasting the medium term (5 years), decreasing in the same pattern as construction. The effect on stream and riparian functionality by construction of bridges would initially be moderate and would be expected to last medium term (less than 5 years). Small residual effects from the presence of bridges and presence of trail in the AIZ would be long term and would last as long as they are in place. An additional pulse of short to medium term effect to channels and riparian functionality would occur if the bridges are reconstructed or removed.
Cumulative Effects Boundaries

The spatialextent for cumulative effects area for both the Tincup and Bilk/Iowa Creek drainages are the same as for direct and indirect effects. The temporal boundary for both cumulative effects areas is expected to exceed twenty years as the trail is expected to be a permanent part of the system.

Affected Environment

As described above, the effects for water resources will be described based on the two HUC-6 watersheds in the project area, Tincup and Iowa. The Iowa HUC includes Bilk Creek and Anderson Gulch.

Tincup Creek and Tributaries

Visits to Tincup Creek and its tributaries, in the vicinities of the proposed crossings, revealed that they are in properly functioning condition, with stable banks that have plenty of diversity of the proper vegetation (where it is not heavily shaded), channels with good sinuosity, deep/narrow cross-section and well stabilized large woody debris(LWD). However, just below the proposed new crossing of the main stem of Tincup is a 300' reach with sizable side channel bars and braided channel. This 1-2 acre willow-meadow complex is the uppermost reach where the channel flattens out. In the section of trail in Tincup, there are no drainage dips, grade reversals or any other design to prevent the trail from collecting and funneling runoff down the trail and causing increased erosion. Where this occurs in the AIZ, it increases the sediment delivered to the creek. This increased sediment is very noticeable on both approaches to the small perennial tributary to Tincup Creek and on the eastern approach to the main crossing of Tincup Creek. The old crossing of the steep intermittent to ephemeral stream, north of Tincup Creek, has eroded out any fill remaining from the historic construction and is back to a small but sharply incised "V" inner gorge near the channel. The primary current man-made sources of fine sediment are from the several trail approaches to stream crossings along the route 447 (historic Winschell Dugway) all of which are lacking proper drainage to minimize sediment and meet the desired condition for riparian areas.

Bilk Creek and Anderson Gulch

The North Fork of Bilk Creek has been drastically affected by historic hydraulic placer mining. The heaviest mechanical hydraulic placer mining occurred from the lower end of Iowa Creek upstream to a point a short distance above the lowest bridge site. The poor channel stability at the location where the old mining road crosses Bilk Creek (most downstream crossing) is due to the still lingering effects of the historic hydraulic mining. The site of the middle crossing of Bilk Creek in the southwest quarter of section 2 is narrowly constrained to the proposed location by deep down cutting of the channel due to historic mining above and below the selected point. The uppermost crossing also could not be any farther downstream due to down cutting resulting from historic placer mining below the proposed bridge site.

Anderson Gulch is affected by placer mining. Most of the channel is under closed canopy conifer and is well-shaded. In the lower reaches, most of the smaller to medium sized in-channel gravels have been excavated and are piled on the floodplain. As this material size are integral to forming meander structure, this has resulted in a marked reduced sinuosity, increased width-depth ratio, and a somewhat straightened, pavement-like channel bottom. In the lower reaches, bank stability is maintained by trees, including conifers. Other factors are wood, shade tolerant shrubs and small patches of herbaceous plant ground covers in between shrubs. Upper reaches of Anderson Gulch are mostly historically down cut, low sinuosity channel types with almost no floodplain, with steep banks of cobble-and-soil arising nearly

directly from the water's edge which are near the angle of repose and though they have very little stabilizing vegetation on them, their abundant rockiness maintains fair to good slope stability. In both the upper and lower reaches, the low sinuosity, high velocity channels with only at best small, well scoured step pools transport any fine sediment that reaches the channel downstream to the lower reaches below the road where the lower gradient is more favorable to deposition.

Environmental Consequences

Alternative 1 – No Action

None of the improvements to the existing trail in the Tincup drainage and to sections of closed road in the Bilk Creek drainagewould occur. The existing sediment impacts to water quality from the existing poorly designed crossings would continue. The alteration of riparian function from poorly designed trail, mostly sediment from lack of proper drainage within the AIZ would continue. There would be no expected change in current intensity or future trend for either measure. The effects from the limited illegal motorized use on the southernmost mile of existing trail from the intersection with 449 northeast to the meadow before the crossing of main Tincup Creek would continue, with presumably the same general trend as the increase in ATV use on the Forest generally.

Table 12. Resource indicators and measures for Alternative 1.

Resource Element	Resource Indicator	Measure	(Alternative 1)
Water quality	Sediment delivery & channel stability	Number of new designated stream crossings	0
Riparian Function	Degradation of AIZ qualities	Miles of motorized trail in AIZ	1.31

Alternative 2 – Proposed Action

Direct and Indirect Effects

The proposed action would construct and reconstruct the most motorized trail in the AIZ and include the most stream crossings. As detrimental effects from historic motorized use persist in the current condition of Tincup Creek, this alternative provides beneficial effects to offset some of the negative effects by bringing existing, historic motorized trail in the AIZ of Tincup Creek and existing, primitive historic crossings up to standard and thus reducing sediment in those locations. The construction of motorized trail in the AIZ and the three trail bridges in the Bilk Creek drainage could cause minor impacts to AIZ qualities and water quality respectively. These minor, temporary negative direct effects would result from the slightly increased disturbance and sediment that would occur during construction of the trail and bridges. However, it must be kept in perspective that the construction of this few miles of trail in the AIZ and 5 bridge crossings represent a very low level of effect. These are projected to subside within two years of growing seasons as sediment is stabilized by regrowth and vegetation and all negative effects from construction are expected to end within

five years, leaving only very minor impacts from the presence of the trail and crossings to persist over the long term.

The proposed action would bring existing trail 447 to current standards, both in the uplands and in the AIZ.This would reduce existing effects to the AIZ.

The proposed action within the Tincup drainage would install trail bridges over two perennial streams in the route. The first is the historic crossing on Tincup Creek and the second is on an unnamed tributary to Tincup Creek. The extra width beyond the usual 1.2 to 1.5 times bankfull width in this design is recommended to go into increased setback of the bridge on the west bank where the bank is lower. This would provide additional flow capacity and to better accommodate higher than typical floodplain flow velocities on this high-gradient, flashy stream and prevent the occurrence of excessive scour immediately downstream of the bridge during high flows.

The second existing historic perennial crossing would become a bridge on a small unnamed perennial tributary to Tincup Creek.This small tributary is spring dominated, has a drainage area less than 100 acres, is low gradient so the flow is relatively constant and of consistently low velocity.

The new segment of trail in the Tincup watershed is completely outside of the "true" AIZ of the easternmost tributary to uppermost Tincup. This new trail is along the ridge for all but a few hundred yards. It is in very stable, durable nearly flat bedded limestone that is extremely resistant to erosion. Any runoff from the trail in these areas would quickly soak into the coarse rocky and sandy soils before it could reach the easternmost tributary to Tincup Creek. Short pieces of trail at the southern and northern end are in fine grain soils but are in mostly flat areas. A small portion of the trail is near the top of a moderate slope, but these are well outside of the AIZ. Runoff from the moderate sloped area would not be an issue because it is very near the ridgeline with no flow from above to concentrate or divert and very far from water.

The first approximately 1,700 feet of trail west of Caribou City in the Iowa HUC-6 watershed would use a closed road that is comprised of large gravel and small cobble similar in composition to much of Caribou City. The next 500 feet is also closed road that is a well formed cut that leads downhill to a historic but eroded crossing of the north fork of Bilk Creek. The middle crossing of the north fork of Bilk Creek is on a short reach of the creek where banks are gently sloped and the crossing could occur without making a large cut. The uppermost crossing of Bilk Creek could be successfully crossed using a bridge with 40 foot long stringers across the creek and span the inner gorge with minimum excavation.

Completing conversion of the historic crossings as described above to current standard would reduce sediment and damage to streambanks which are caused by the poorly designed historic primitive fords that are in place at present.

Table 13. Resource Indicators and measures for Alternative 2 direct/indirect effects.

Resource Element	Resource Indicator	Measure	Alternative 2 Direct/Indirect Effects
Water quality	Sediment delivery	Number of trail stream crossings	5
Riparian Function, and channel stability	Sediment delivery and streamside cover	Miles of designated motorized routes in AIZ	3.35

Cumulative Effects – Alternative 2

All past cumulative effects are accounted for in the existing condition for both the Tincup and Bilk/Iowa cumulative effects analysis areas. The proposed Caribou Loop Connector trail may increase traffic on the proposed trail. The additional traffic can incrementally increase loosening of material from the trail tread; in an AIZ, this has the potential to transport to water. Relatively small scale placer mining for gold has occurred and is expected to occur in the future in the Bilk Creek and Anderson Gulch drainages of the Iowa/Bilk effects area, generating about 1 acre or less of disturbance along the creek bank (generally highbank suction dredging). This mining may require access by relatively small excavation equipment such as skid-steers which are narrow enough to traverse existing trails. While ambitious somewhat larger scale placer mining proposals and mine plans in the Bilk Creek and Anderson Gulch drainages arise from time-to-time, each one has fizzled out as initial diggings for claims have produced only small amounts of gold. Mining has the potential to increase sediment delivery to streams and thereby affect water quality. Highbank suction dredging has the potential to affect water quality and channel stability.

Alternative 3

Direct and Indirect Effects

Alternative 3 would only involve the direct effects of new disturbance and reconstruction in the Iowa Creek HUC-6, as discussed in Alternative 2 above. None of the ground disturbance that were planned in the Tincup HUC-6 would occur. The actions would include three bridged crossings of perennial Bilk Creek.

Table 14. Resource Indicators and measures for Alternative 3 direct/indirect effects.

Resource Element	Resource Indicator	Measure	Alternative 3 Direct/Indirect Effects
Water quality	Sediment delivery & channel stability	Number of designated stream crossings with motorized effects	3
Riparian Function	Degradation of AIZ qualities	Miles of designated motorized routes in AIZs	2.35

Cumulative Effects – Alternative 3

Under this alternative, ground-disturbing activities would only occur in the Bilk/Iowa HUC-6 cumulative effects analysis area. The proposed Caribou Loop Connector trail may increase traffic on the proposed trail. The additional traffic can incrementally increase loosening of material from the trail tread; in an AIZ, this has the potential to transport to water. Relatively small scale placer mining for gold has occurred and is expected to occur in the future in the Bilk Creek and Anderson Gulch drainages of the Iowa/Bilk effects area, generating about 1 acre or less of disturbance along the creek bank (generally highbank suction dredging). This mining may require access by relatively small excavation equipment such as skid-steers

which are narrow enough to traverse existing trails. While ambitious somewhat larger scale placer mining proposals and mine plans in the Bilk Creek and Anderson Gulch drainages arise from time-to-time, each one has fizzled out as initial diggings for claims have produced only small amounts of gold. Mining has the potential to increase sediment delivery to streams and thereby affect water quality. Highbank suction dredging has the potential to affect water quality and channel stability. The list of past and present actions and natural events disclosed under alternative 1 cumulative effects would also occur under alternative 3 with the same expected intensity and affect.

Summary

The table below discloses a concise summary comparison of the effects of the alternatives for the hydrology resource.

Table 15. Summary Comparison of environmental effects to hydrologic resources.

Resource Element	Indicator-Measure	Alt 1	Alt 2	Alt 3
Water quality	Number of perennial stream crossings for motorized trail	No conversion of existing historic primitive stream fords to standard in Tincup would occur. Minor impacts to water quality would continue. There would be no change in the Bilk Creek drainage. This alternative has the least negative impact, though impacts are small. This alt is the most desirable for water quality.	Bridges at all 5 proposed perennial stream crossings (2 in Tincup and 3 in Bilk) would be built, causing minor negative impacts but bridges best minimize the negative effects of motorized crossings and would partly offset negative impacts from the existing historic fords. Additional minor negative impacts from the intermittent crossing in Tincup would occur. As this alternative authorizes the most stream crossings, this is the least desirable alternative for this measure. The negative effects are relatively small due to the small scale of bridge construction authorized and negative effects would mostly be short term and decrease to very small within two years.	Bridges at 3 proposed perennial stream crossings in Bilk would be built and none in Tincup, causing minor negative impacts to Bilk Creek and no change to Tincup Creek. Bridges would best minimize the negative effects of motorized crossings in Bilk Creek. Because this alternative authorizes fewer bridges than alt 2. The negative effects are relatively small due to the small scale of bridge construction authorized and negative effects would mostly be short term and decrease to a very small amount within two years.

Resource Element	Indicator-Measure	Alt 1	Alt 2	Alt 3
Degradation of AIZ qualities	Miles of designated motorized route in AIZs.	The existing segments of motorized route within the AIZ is 1.31 miles. No existing historic trail within the AIZ of Tincup Creek would be brought up to standard. Minor impairments to AIZ quality in Tincup would continue. There would be no change in Bilk Creek. This is the most desirable alternative for AIZ quality, but the differences between the alternatives are small.	Collectively the newly established trail loop would contain 3.35 miles of routes within the AIZ. All existing motorized trail in the AIZ of Tincup would be brought up to standard, yielding a minor improvement in AIZ quality in that drainage. 2.04 miles of new trail in the Bilk drainage would be built, causing minor negative impacts in that drainage. Minor negative impacts from the construction would occur in the short term, decreasing within two years to very minor for the long term. This is the most desirable alternative for AIZ quality but the differences between alternatives are small.	The newly established trail would contain 2.35 miles of routes within the AIZ. Only 0.1 miles of historic trail in AIZ of Bilk Creek would be brought up to standard. 1.04 miles of new trail in the AIZ of Bilk would be constructed with minor impacts in the short term decreasing to very minor impacts in the long term. This alternative is more favorable than alternative 2 but less favorable than alternative 1. The differences between the alternatives are small.

Fisheries

This section discusses the components of the fisheries resource that could be affected by the proposed activities. This information is extrapolated directly from the Fisheries Specialist Report *(Lyman, 2016)*. The fisheries resource analysis focuses on the interactions of the proposed alternatives to aquatic influence zones (AIZs) in the project area. The analysis identifies the existing fisheries and aquatic resource conditions and discloses the potential benefits and impacts for the fisheries and aquatic resources.

Issues

Trails located within the AIZ can alter the function of the aquatic buffer which may reduce the resiliency of these sensitive areas or lead to degradation of these areas. Trail crossings at waterways can connect adjacent disturbed areas, such as trail corridors, directly to streams and can serve as conduits for delivering pollutants including sediment. This report will focus two indicators: number of motorized trail crossings and motorized trail miles within AIZs.

Resource Indicators and Measures

Standards and guidelines have been established for riparian and aquatic areas in the RFP (2003), which provide for the protection of these resources and dependent species. The following indicators provide a basis for comparing the direct and indirect effects of the project alternatives to the fisheries resource.

Table 16. Resource indicators and measures for assessing effects.

Resource Element	Resource Indicator	Measure (Quantify if possible)	Used to address: P/N, or key issue?	Source
Water quality	Sediment delivery & channel stability	Number of new motorized trail crossings	Addresses Fisheries Issue	RFP AIZ DFC pg. 4-47
Riparian Function	Degradation of AIZ qualities	Miles of motorized trail in AIZ	Addresses Fisheries Issue	RFP AIZ DFC pg. 4-47

Resource Indicator – Miles of Motorized Trail in AIZ
New recreational infrastructure within the AIZ can alter the physical effectiveness of the aquatic buffer. Ground disturbing activities, within the AIZ, have the potential to degrade downstream water quality. Motorized trails are a persistent ground disturbance. Trails are linear features that can disrupt and concentrate overland flow patterns. Water collected and shed from trails can cause erosion of trail surfaces and erosion of adjacent areas due to concentration of flows and riling. Continual mechanical disturbance of native trail surfaces can accelerate trail erosion due to channelization within wheel tracks.

Resource Indicator – Number of Motorized
Trail crossings create a nexus, connecting the trail network to the waterway. These locations essentially connect the linear trail disturbance to the waterway and can be a direct source for pollutants to enter a waterway. Trail crossings can also impact aquatic habitat by altering channel stability and morphology and aquatic habitat complexity and productivity. Removal of streamside vegetation can influence stability, cover, shading, and large woody debris recruitment that are important for maintaining a fishery.

The action alternatives would increase miles of motorized trails in AIZs and the number of trail crossings in the project area. This new infrastructure will create disturbance within the AIZ and has the potential to degrade AIZ conditions above existing conditions. New infrastructure including trails located within the AIZ can alter the physical effectiveness of the aquatic buffer and can decrease habitat complexity and quality.

Methodology

Route miles in the AIZ were calculated using ArcMap 10.3. Spatial data included a GPS line of the proposed route(s) developed by the Project Lead and the Forest corporate layer of default AIZ widths. Field visits by C. Lyman, Fisheries Biologist, were made to Bilk Creek on 6/16/2016 and 7/19/2016 and followed the proposed trail location. Pictures and field notes were recorded. Information on Tincup Creek was gathered from personal communication with the J. Laprevote, Hydrologist and from the hydrology report (Laprevote 2016).

Information Sources

Information includes both spatial data used for spatial interpretation and site visits. Data used in this analysis represents the best available at the time of analysis.

Incomplete and Unavailable Information
No data gaps were apparent during the completion of this analysis.

Spatial and Temporal Context

The affected spatial analysis area for fisheries and aquatics resource includes the following two HUC-6 watersheds: Iowa-McCoy Creek (170401040203) and Upper Tincup Creek (170401050304). The temporal boundaries for analyzing the cumulative effects are greater than 20 years due to the anticipated permanence of a system trail.

Direct and Indirect Effects Boundaries
TheIowa-McCoy Creek and Upper Tincup Creek HUC's were selected for the effects boundary because they encompass all new trail segments in the project area and the anticipated effects area for the fisheries resources in Bilk and Tincup creeks. The Iowa-McCoy creek HUC 6 is 13,545 acres and the Upper Tincup HUC 6 watershed is 25,560 acres (Green 2016).

The hydrology report (Laprevote 2016) designates a smaller direct/indirect and cumulative effects boundary within these watersheds and provides suitable rationale for indicators associated with water quality. For the fisheries and aquatics resource the boundary was enlarged to account for system connectivity and fish movement within streams near the project area and to account for the scale of fisheries data available. It is important to note that, the scale of the designated watersheds (39,105 acres total) dwarfs the scale of the project area (12 acres total, mainly located in headwater 1st and 2nd order stream segments).

Within this report, the analysis of miles of proposed trail in AIZs also accounts for existing miles of routes (trails and roads) located in AIZ's. These routes already exist on the landscape and were included in the description of this indicator because they connect to the new trail segments. Ultimately these existing route miles in AIZ's provide a baseline for comparison of alternatives under this indicator. A majority of these existing route segments are located in neighboring watersheds. These routes will not be altered with this decision therefore these watersheds were not included in the effects boundary and will not be discussed in detail in this report.

Cumulative Effects Boundaries
The same effects boundary and rationale described above will be used for the cumulative effects boundary.

Affected Environment

The fisheries report will focus primarily on perennial streams within the effects boundary including Bilk and Tincup creeks. These streams support sensitive fish species including Yellowstone cutthroat trout (YCT) and northern leatherside chub (NLC). Both are Regional Forester's Sensitive Species and Species of Concern for the State of Idaho.

Fish Distribution

Bilk Creek is a Yellowstone cutthroat trout stronghold tributary to Iowa Creek, within the McCoy Creek drainage. McCoy Creek flows into Palisades Reservoir located on the South Fork of the Snake River. The McCoy Creek drainage is known to support multiple life histories (adfluvial/fluvial and resident) of Yellowstone cutthroat trout.

Bilk Creek was sampled for fish by the USFS in 2003 (Berg 2003) and again in 2012 by the Forest Fish Distribution Crew (USFS 2012). Yellowstone cutthroat trout were the only

species collected and were present at all sampling locations. Both sampling efforts on Bilk Creek were located on the reach starting at the confluence with Iowa Creek and ending at the fork below Caribou City. This reach is below FSR 165 and below all proposed trail segments.

Tincup Creek is a Yellowstone cutthroat trout stronghold tributary to the Salt River. Tincup Creek is known to support multiple life histories (fluvial and resident). Tincup Creek was sampled for fish by the USFS in 2000 and 2010 by the Forest Fish Distribution Crew (USFS 2000, 2010). Yellowstone cutthroat trout were the dominant trout species collected and were present at all sampling locations. Very low numbers of brown trout were also encountered during both sampling years. Tincup also supports a high diversity of non-game species that were represented in the sampling effort.

Tincup Creek is also known to support northern leatherside chub (NLC). Jason Blakney, ISU graduate student, documented NLC in Tincup Creek in 2010-11 while conducting a thesis project on NLC distribution, abundance, and genetic structure (Keeley et al, 2012). In 2015 Mabey and Lyman (Mabey 2015) followed up this research by conducting a mark-recapture study using minnow traps. In this effort, 45 trapping locations, sampled twice, yielded 174 captures (mark run n=103, recapture run n=71) including 39 recaptures.

Habitat Conditions

Stream channels and floodplains in Bilk, Anderson, and Iowa creeks have been severely altered by historic hydraulic placer mining with Iowa Creek functioning as the response reach with high amounts of bedload deposition. The stream corridor in Bilk Creek served as a mining site and flume during the years of mining. In one location near the proposed lower crossing a large cobble/boulder field still is present in the floodplain. In other areas of the stream, hill cuts are present in addition to cobble lined fill slopes.

In general the riparian vegetation on Bilk Creek has recovered in the lower reaches and provides LWD and cover and stability to the channel. In the upper reaches, where the valley is narrow, the riparian and floodplain width has decreased due to the mining impacts. At the cobble/ boulder field, a dike is present that restricts riparian establishment and has contributed to the development of overflow channels.

Past mining activities have also left abandoned road templates that have revegetated with small trees. At the lower and middle crossing locations these roads lead to the Bilk floodplain and the crossing locations are stabilized and vegetated and not currently impacting aquatic habitat.

Stream channel and floodplains in upper Tincup Creek are representative of good conditions, with historic mining not present at the drainage scale. In general the headwaters of Tincup are composed of a series of alternating confined and unconfined valley types. In many areas, meadows are present, consisting of fine grain soils and highly sinuous stream channels. Beaver are present throughout this system including the headwaters near Morgan Meadows. In some reaches without beaver the stream has down cut causing bank instability and widening of the channel. In general, aquatic habitat in Upper Tincup Creek is in good condition.

Motorized Routes (Roads and Trails)
Currently motorized routes are not prevalent in the Bilk and Tincup drainages.

In Bilk Creek, FSR 165 contains a crossing that was improved with an arch culvert and the road was graveled around 2010. In the headwaters FSR 381 crosses two perennial headwater forks of BilkCreek on patented land. A small ford crosses the middle fork of Bilk Creek on an un-improved segment of FSR 165 that connects to non-motorized trails #457 and #447. This crossing was described as stable in the hydrology report (Laprevote 2016).

Old mining roads are present in the Bilk drainage that will be incorporated into the new motorized trail. One route located above Caribou City is actively used for the first ¼ mile by ATV's and leads to some old mining remnants on the hillside bench above Bilk Creek. This route also consists of an old dugway that leads down the slope to Bilk Creek and the disturbed area with the floodplain mine tailings. Another old road bed exists in the headwaters and connects to FSR381 on patented lands. This route follows the valley bottom slope with a gentle grade then connects to a Dugway that leads down to and crosses Bilk Creek.Both of these routes, with the exception of the ¼ mile segment near Caribou City are not actively used and are vegetated. These routes are not improved and are native surface. Both dugway locations are located on timbered north facing slopes and have downed trees and live trees growing in the road template.

Both of the mining roads were historically used to cross Bilk Creek. At these locations the crossings have vegetated and are not contributing to channel or aquatic habitat degradation. The lower crossing location has multiple over-flow channels and the stream channel is confined by a berm composed of mine tailings. Most of the impacts present in this area are a result of past mining activities and not related to use of the crossing. The middle crossing location was not apparent during field visits by the hydrologist (Laprevote personal communication). Currently there are no designated motorized trails in the Bilk drainage.

On Tincup Creek above Tincup Road (FSR 117) the headwaters are mostly devoid of motorized routes. FSR 189 leads to Morgan Meadows and the start of motorized trail 449. Near this location an improved ATV bridge was installed on a fork of Tincup Creek. Segments of Trail 449 are located in the Tincup drainage with most of the trail located on ridgelines. Trail 449 also connects to non-motorized trails including Trail 447 (Historic Winschell Dugway Route) and contains two un-improved ford crossings on Tincup Creek. The hydrology report describes the crossings as degraded and not meeting desired conditions. At one location degraded conditions may have been caused or further degraded by off-system route ATV use (Laprevote 2016). This same segment of Trail 447 is part of a proposed motorized trail in Alternative 2.

With this project, the proposed alternatives would create new segments of motorized trails to form loops by linking into existing system roads and trails. Aside from the newly proposed trail segments identified, the existing routes and trails that form the loop(s) are the same for both alternatives 2 and 3 due to the short connecter trail segment on Bilk that links into FSR 381 that is common in both alternatives. The loop routes are composed of the following motorized segments: FSR 381, FSR 188, TR 451, and TR 449. For the most part the Bilk and

Tincup drainages and the effects area do not have a high amount of existing system motorized routes. For this analysis the indicators will focus solely on motorized trail segments located in AIZ's and the number of motorized trail crossings located solely on Bilk and Tincup creeks.

Resource Indicator and Measure 1

There is currently only one existing motorized trail crossing located on upper Tincup Creek on Trail 449. This site is located in Morgan Meadows on a headwater fork of Tincup Creek. The structure was improved in 2010-11 to improve stream conditions at the crossing. This site is currently meeting desired conditions.

Resource Indicator and Measure 2

There are currently 0.46 miles of motorized trails located in the AIZ of the Tincup headwaters. Trail 449 crosses a perennial fork of Tincup Creek at the crossing mentioned above and then comes near a headwater spring of the same fork. Collectively the existing segments of the trail loop contains 1.31 miles of routes with the AIZ. These routes include both motorized trails and roads (FSR 381, FSR 188, TR 451, and TR 449).

Table 17. Resource indicators and measures for the existing condition

Resource Element	Resource Indicator (Quantify if possible)	Measure (Quantify if possible)	Existing Condition
Water quality	Sediment delivery & channel stability	Number of newmotorized trail crossings	0
Riparian Function	Degradation of AIZ qualities	Miles of motorized trail in AIZ	1.31 miles

Environmental Consequences

Alternative 1 – No Action

Alternative 1 would maintain AIZ function and fisheries and aquatic habitat conditions within Tincup and Bilk creeks at levels described in the existing conditions section. This alternative would not expand the motorized trail network into the Bilk drainage or within the Tincup drainage. This action would not involve any ground disturbing activities in AIZ's or to stream channels in the project area. Bilk and Tincup creeks support sensitive fish including Yellowstone cutthroat trout and northern leatherside chub. This alternative would not expand miles of motorized routes in AIZ's or the number of stream crossings on these systems and therefore would not impact aquatic habitat or sensitive fish populations. The indicators listed in the existing condition section are not expected to change.

It has been noted that sections of non-motorized Trail 447 within the Tincup drainage contains several ford crossings that are not meeting desired conditions. Degraded conditions at these sites are expected to continue until BMP's are prioritized and implemented for this non-motorized trail segment. Under Alternative 1 this segment of trail would not be converted to a motorized trail segment and active restoration of the degraded crossings and bridge installation would not occur under this alternative.

Alternative 2 – Proposed Action

Direct and Indirect Effects

This alternative would slightly degrade water quality/aquatic habitat conditions on streams that support sensitive fish species, by creating five perennial stream crossings and2.04 miles of motorized trail disturbance within the AIZ. Alternative 2 would expand the motorized trail network within the Bilk and Tincup drainages. This action would involve ground disturbing activities in AIZ's and potentially to stream channels in the project area. Bilk and Tincup creeks support sensitive native fish including Yellowstone cutthroat trout and northern leatherside chub.

Alternative 2 would expand miles of motorized routes in AIZ's and the number of stream crossings on these systems above existing conditions. The recommended BMPs included above and in the hydrology report (Laprevote 2016) are intended to reduce the impact, but it is improbable to avoid sediment delivery to Bilk and Tincup creeks.It is difficult to completely offset the impact of buildingfive stream crossings and over two miles of motorized trail within the AIZ. The recommended BMPs will help protect AIZ and aquatic habitat values to the extent practicable given the proposed action.

The proposed action would result in soil disturbance and compaction within the AIZ which can increase soil erosion and sediment and runoff delivery to stream channels. The use of these trails over time could also produce impacts to water quality. Proper BMP implementation during construction and trail maintenance periods is necessary to protect water quality/aquatic habitat quality. Most of the risk, especially in terms of sediment production, would occur in the short-term during and shortly after construction (~3-5 years).Long-term water quality could be protected through implementation of BMPs. The trails and trail/stream channel crossings would also be designed to meet standards therefore reducing sediment and runoff delivery to streams.

The proposed action would create new disturbances and infrastructure within the AIZ. Ground disturbing activities associated with this action may produce short-term increases in sediment to Bilk and Tincup creeks. Long-term increases in sediment from new infrastructure are not expected if BMPs are followed and routine maintenance is implemented. Impacts to water quality may slightly impact aquatic habitat and the fisheries resource within and below the project area. It is anticipated that these impacts will not be measureable above current conditions.

Resource Indicator and Measure 1

There is currently only one motorized trail crossing located on upper Tincup on motorized Trail 449. Alternative 2 would add five additional motorized trail crossings on Bilk and Tincup creeks. Two non-motorized trail crossings on Tincup Creek that have been described as degraded and not meeting desired conditions will be improved in alternate locations. These two existing fords will be rehabilitated under this action.

Resource Indicator and Measure 2

There are currently 0.46 miles of motorized trails located in the AIZ of the Tincup headwaters on Trail 449. Alternative 2 would add 2.04 miles of motorized trail disturbance in the AIZ's of Bilk and Tincup creeks. Collectively the newly established trail loop would contain 3.35 miles of routes within the AIZ. These routes include existing motorized trails and roads (FSR 381, FSR 188, TR 451, and TR 449) and the new segments of motorized trail outlined under this alternative.

Table 18. Resource indicators and measures for Alternative 2 direct/indirect effects.

Resource Element	Resource Indicator (Quantify if possible)	Measure (Quantify if possible)	Alternative 2 Direct/Indirect Effects
Water quality	Sediment delivery & channel stability	Number of motorized trail crossings	5 (3 on Bilk Creek) (2 on Tincup and tributary)
Riparian Function	Degradation of AIZ qualities	Miles of motorized trail in AIZ	3.35 miles (1.04 miles in Bilk drainage) (1 mile in Tincup drainage)

Cumulative Effects

Past, Present, and Reasonably Foreseeable Activities Relevant to Cumulative Effects Analysis

Cumulative effects are analyzed at the following two HUC-6 watersheds: Iowa-McCoy Creek (170401040203) and Upper Tincup Creek (170401050304).

Some past and present activities that impact(ed) AIZs include livestock grazing, livestock infrastructure maintenance, firewood collection, post and pole cutting, recreational activities, road and trail construction and use, road and trail maintenance, off-trail motorized use, wildfire suppression, prescribed burns, mining,dredging, and natural events. The level of impact associated with these activities can vary depending on the scale, intensity, and concentration of disturbance. When these activities occur within AIZ's they have the potential to inhibit AIZ function and impact water quality.

Resource Indicator and Measure 1

The Caribou Connector Trail has currently been proposed and is located within the drainage of a small perennial tributary of Tincup that parallels Highway 34. One new motorized trail crossing has been proposed on Tincup Creek. No other new road or trail crossings are anticipated in the analysis area.

Resource Indicator and Measure 2

The Caribou Connector Trail has currently been proposed and is located within the drainage of a small perennial tributary of Tincup that parallels Highway 34. About one mile of new trail would have segments located in the AIZ. No other new road or trails are anticipated in the analysis area.

Small scale placer mining for gold has occurred and is expected to occur in the future in the Bilk Creek and Anderson Gulch drainages. A proposed new mining plan may occur in lower Bilk Creek.

Alternative 3

Direct and Indirect Effects

This alternative would slightly degrade water quality/aquatic habitat conditions on streams that support sensitive fish species, by creating three perennial stream crossings and 1.04 miles of motorized trail disturbance within the AIZ. Alternative 3 would expand the motorized trail network within the Bilk drainage. This action would involve ground disturbing activities in AIZ's and potentially to stream channels in the project area. Bilk Creek supports sensitive fish including Yellowstone cutthroat trout.

Alternative 3 would expand miles of motorized routes in AIZ's and the number of stream crossings on these systems above existing conditions. The recommended BMPs included above and in the hydrology report (Laprevote 2016) are intended to reduce the impact, but it is improbable to avoid sediment delivery to Bilk Creek. It is difficult to completely offset the impact of building three stream crossings and over one mile of motorized trail within the AIZ. The recommended BMPs will help protect AIZ and aquatic habitat values to the extent practicable.

The proposed action would result in soil disturbance and compaction within the AIZ which can increase soil erosion and sediment and runoff delivery to stream channels. The use of these trails over time could also produce impacts to water quality. Proper BMP implementation during construction and trail maintenance periods is necessary to protect water quality/aquatic habitat quality. Most of the risk, especially in terms of sediment production, would occur in the short-term during and shortly after construction (~3-5 years). Long-term water quality could be protected through implementation of BMPs. The trails and trail/stream channel crossings would also be designed to reduce sediment and runoff delivery to streams.

The proposed action would create new disturbances and infrastructure within the AIZ. Ground disturbing activities associated with this action may produce short-term increases in sediment to Bilk Creek. Long-term increases in sediment from new infrastructure are not expected if BMPs are followed and routine maintenance is implemented. Impacts to water quality may slightly impact aquatic habitat and the fisheries resource within and below the project area. It is anticipated that these impacts will not be measureable above current conditions.

Resource Indicator and Measure 1

Alternative 3 would create three motorized trail crossings on Bilk Creek. All of these sites would constitute new disturbance.

Resource Indicator and Measure 2

Alternative 3 would add 1.04 miles of motorized trail disturbance in the AIZ's of Bilk Creek. Collectively the newly established trail loop would contain 2.35 miles of routes with the AIZ.

These routes include existing motorized trails and roads (FSR 381, FSR 188, TR 451, and TR 449) and the new segments of motorized trail outlined under this alternative.

Table 19. Resource indicators and measures for Alternative 3 direct/indirect effects.

Resource Element	Resource Indicator (Quantify if possible)	Measure (Quantify if possible)	Alternative 3 Direct/Indirect Effects
Water quality	Sediment delivery & channel stability	Number of motorized trail crossings	3 (Bilk Creek)
Riparian Function	Degradation of AIZ qualities	Miles of motorized trail in AIZ	2.35 (1.04 miles, Bilk drainage)

Cumulative Effects

Past, Present, and Reasonably Foreseeable Activities Relevant to Cumulative Effects Analysis

Cumulative effects are analyzed at the following HUC-6 watersheds: Iowa-McCoy Creek (170401040203) and Upper Tincup Creek (170401050304).

Some past and present activities that impact(ed) AIZs include livestock grazing, livestock infrastructure maintenance, firewood collection, post and pole cutting, recreational activities, road and trail construction and use, road and trail maintenance, off-trail motorized use, wildfire suppression, prescribed burns, mining,dredging, and natural events. The level of impact associated with these activities can vary depending on the scale, intensity, and concentration of disturbance. When these activities occur within AIZ's they have the potential to inhibit AIZ function and impact water quality.

Resource Indicator and Measure 1

The Caribou Connector Trail has currently been proposed and is located within the drainage of a small perennial tributary of Tincup that parallels Highway 34. One new motorized trail crossing has been proposed on Tincup Creek. No other new road or trail crossings are anticipated in the analysis area.

Resource Indicator and Measure 2

The Caribou Connector Trail has currently been proposed and is located within the drainage of a small perennial tributary of Tincup that parallels Highway 34. About one mile of new trail would have segments located in the AIZ. No other new road or trails are anticipated in the analysis area.

Small scale placer mining for gold has occurred and is expected to occur in the future in the Bilk Creek and Anderson Gulch drainages. A proposed new mining plan may occur in lower Bilk Creek.

Summary

A summary of the issues and indicators for the fisheries resource are summarized in the following tables below.

Table 20. Summary comparison of environmental effects to fisheries resources

Resource Element	Indicator/Measure	Alt 1	Alt 2	Alt 3
Water quality	Number of perennial stream crossings for motorized trail	Existing non-motorized trails in Tincup would not be converted to motorized trails. Two primitive stream fordsassociated with these trails would not be improved with bridges. Minor impacts to water quality would continue at these locations. The Bilk Creek drainage would see no change, as there would be no new motorized crossings developed. This alternative has the least negative impact, though impacts are small. This alt is the most desirable for water quality.	Bridges at all 5 proposed perennial stream crossings 2 in Tincup and 3 in Bilk would be built, causing minor negative impacts but bridges best minimize the negative effects of motorized crossings and would partly offset negative impacts from the fords, located in Tincup. As this alternative authorizes the most stream crossings, this is the least desirable alternative for this measure. The negative effects are relatively small due to the small scale of bridge construction authorized and negative effects would mostly be short term and decrease to very small within two years.	Bridges at 3 proposed perennial stream crossings in Bilk would be built and none in Tincup, causing minor negative impacts to Bilk Creek and no change to Tincup Creek. Bridges would best minimize the negative effects of motorized crossings in Bilk Creek. Because this alt authorizes fewer bridges than alt 2, it is more desirable than alt 2 but less favorable than alternative 1 for this measure. The negative effects are smaller than under alt 2 but greater than alt 1. The negative effects are relatively small due to the small scale of bridge construction authorized and negative effects would mostly be short term and decrease to a very small within two years.
Degradation of AIZ qualities	Miles of designated motorized route in AIZs.	The existing segments of motorized route within the AIZ is 1.31 miles. No non-motorized trail segments within the AIZ of Tincup Creek would be brought up to motorized standard. Minor impairments to AIZ quality in Tincup would continue. There would be no change in Bilk Creek. This is the most desirable alternative for AIZ quality.	Collectively the newly established trail loop would contain 3.35 miles of routes within the AIZ. 1 mile of non-motorized trail in the AIZ of Tincup would be brought up to motorized standard, yielding a minor improvement in AIZ quality in that drainage. 1.04 miles of new motorized trail in the AIZ of Bilk would be built, causing minor negative impacts in that drainage. Minor negative impacts from the construction would occur in the short term, decreasing within two years to very minor for the long term. As this alternative authorizes the most miles of motorized trails within AIZs, this is the least desirable alternative for this measure.	The newly established trail would contain 2.35 miles of routes within the AIZ. 1.04 miles of new motorized trail in the AIZ of Bilk would be constructed with minor impacts in the short term decreasing to very minor impacts in the long term. This alternative also increases miles of motorized trails within AIZs, although about half the miles as alternative 2. This alternative is more favorable than alternative 2 but less favorable than alternative 1.

Recreation, Roadless and Recommended Wilderness __

This section discusses the components of recreation, roadless, and recommended wilderness resourcesthat could be affected by the proposed activities. This information is extrapolated directly from the Recreation, Trails, and Wilderness Resources Specialist Report*(Orme, 2016).* The recreation analysis focuses on recreation experiences, roadless area characteristics and wilderness attributes. The analysis discusses the existing recreation experiences and discloses the potential effects on that setting from the proposed activities. It also discloses the anticipated effects to roadless characteristics and wilderness attributes from the proposed activities.

Issues

Issue 1: Recreation. The proposed action could have adverse impacts to recreation experiences within the project area.

Issue 2: Caribou City Roadless Area and Caribou City Recommended Wilderness Area. The proposed action could have adverse impacts to the Caribou City Roadless Area and the Caribou City Recommended Wilderness Area.

Resource Indicators and Measures

Resource indicators and measures were developed based on FSM 2320, 2350, 7723, FSH 2309.18 and the Idaho Roadless Area Management (Roadless Rule). The following indicators provide a basis for comparing the direct and indirect effects of the project alternatives to the recreation resource, Caribou City Roadless Area and Caribou City Recommended Wilderness Area.

Table 21. Recreation, Trails, and Wilderness indicators and measures for assessing effects.

Resource Element	Resource Indicator	Measure (Quantify if possible)	Used to address: P/N, or key issue?	Source (LRMP S/G; law or policy, BMPs, etc.)?
Recreation	The miles of new motorized trail within the Caribou City IRA.	Miles	Yes	FSM 2350, 7723, FSH 2309.18,
Roadless and RWA	The effects to roadless characteristics and wilderness attributes	Roadless Values Wilderness Characteristics	Yes	Idaho Roadless Area Management, Forest Plan S&G
Roadless and RWA	The effects of noise and visuals on the RWA	Acres of visual impacts. Sound impacts on the Caribou City RWA	Yes	FSM 2320,Forest Plan S&G, Idaho Roadless Conservation Rule,

Methodology

FSH 2309.18 and FSM 2350 and FSM 7723, along with the Idaho Roadless Rule, the Forest Plan and the Forest Travel Management Plan provide direction on management of recreation, trails, and Inventoried Roadless and Recommended Wilderness areas.

This analysis addresses the potential effects of the Winschell Dugway Motorized Trail System on summer use. Winter use is not part of this analysis as it has been covered under the Caribou Travel Management Plan.

For the Winschell Dugway Motorized Trail Project, the Forest has determined that UTVs less than 50 inches in width would be permitted on designated, motorized trails.UTVs larger than 50 inches would not be permitted on the proposed trail system.

The Winschell Dugway Motorized Trail would be added as a forest system trail and would be considered a Trail Class 2. A Trail Class 2 is defined as "a low standard trail with few structures".

Information Sources

Information in this analysis was drawn from various sources including on-the-ground surveys, local knowledge and Forest Service directives. Additional resources will be discussed and cited throughout the document and also found in the project record.

The proposed alternative trail locations have been field verified by the recreation staff on the Soda Springs Ranger District in July of 2016.

Incomplete and Unavailable Information

Little data exists in the district files regarding the number of users in the project area. Observations by district staff indicate there is relatively low use in the area with the exception of the fall hunting season. In July of 2016, the entire route was GPS'd and reviewed, very few public encounters occurred during the route inspections.

Spatial and Temporal Context

The recreation, trails, and wilderness resource affected by this proposal is the area within the Caribou City Inventoried Roadless Area. The effects of the project are both short term and long term.

The Caribou City IRA is analyzed as a whole due to the consideration of effects to the roadless values and wilderness characteristics of the IRA and any effects the project may have on the Caribou City RWA.

Direct and Indirect Effect Boundaries

The spatial boundaries for analyzing the direct and indirect effects to trails is the Caribou City IRA boundary which includes the Caribou Mountain Special Emphasis Area 2.1.4(b) and the Caribou City Recommended Wilderness Area 1.3(e) prescription areas. The project has the ability to affect roadless values and wilderness characteristics by designating a motorized route through the IRA. In addition, there would be visual and noise impacts to the RWA.

Temporal effects are two fold, short term and long term. The short term temporal effects are expected to last one to two seasons for trail reconstruction and construction, depending upon weather and ground conditions. Long term effects could be for decades, depending upon how long the trail is listed on the forest system or as long as Bonneville County maintains the

trail. The Authorized Officer has the authority to close the trail at any time if resource conditions deteriorate.

Cumulative Effects Boundaries

The spatial boundaries for analyzing the cumulative effects to the trails resource are the same area used for the Direct/Indirect Effects because this large area would encompass the cumulative effects of the proposed Winschell Dugway Motorized Trail.

The temporal boundaries for analyzing the cumulative effects are into perpetuity, because the trail is expected to remain on the Forest Trail System as long as Bonneville County chooses to operate and maintain the trail.

Affected Environment

Recreation

There are approximately 167 miles of motorized summer system trails on the Soda Springs Ranger District. Most system trails were developed in the early part of the 20th century; some follow historic travel routes and were used to facilitate transportation by pack string or on foot, primarily for transportation or for work but not necessarily for recreation. Trails accessed mining claims, grazing allotments, administrative sites, and remote locations for firefighting.

Non-motorized summer use on system trails includes day hiking, backpacking and horse riding/packing. During hunting season, horse use on the districttypically increases. Non-motorized trails within the project area include the Caribou City Trail #447, Tin Cup Creek Trail #445, Jackknife Creek Trail #448, and Trail Creek Trail #457.

The trail track for this project would be a double track trail for ATVs or vehicles 50 inches or less in width. Additionally, ATVs may be permitted to operate on identified roads open to full-size motorized vehicles. All non-motorized users can use single or ATV trails, however; motorized vehicles cannot travel on non-motorized trails. Implementation of any action alternative under the new 2005 Travel Management Rule would result in motorized vehicles being restricted to designated roads and trails. The Forest Service would add the route to the motor vehicle use map (MVUM) as a route open to motorized travel. The MVUM will be the controlling legal enforcement tool, and operators of motor vehicles will be responsible for complying with the MVUM. Onsite posting of signs is not essential to enforce the new travel plan; however, signing would be used to minimize inadvertent violation of restrictions.

Big-game hunting is one of the primary recreation activities on the Soda Springs Ranger District. Idaho Fish and Game (IDFG) administers hunting within Idaho. Hunting locations vary somewhat depending on the game species. The largest number of hunters in the project area occur in the fall, the archery hunt begins with the September general season and those hunters lucky enough to draw a controlled hunt utilize the area in October. District personnel have talked with residents from 10 states during the fall archery hunt who utilize the project area: ID, MT, UT, WY, IN, WV, SD, and CA.

Open Motorized Route Density

The Open Motorized Route Density (ORMD) includes all open forest roads and trails displayed in miles per square mile for a specific analysis area as discussed in the 2005 Caribou Travel Management Plan. The existing OMRD for the Caribou Mountain Special Emphasis Area is 1.1 miles of designated motorized route per square mile with a ceiling of 1.5 miles of designated route per square mile.

Caribou City Inventoried Roadless Area

Inventoried Roadless Areas (IRAs) are areas of National Forest System lands which have been inventoried by the Forest Service for possible inclusion in the wilderness preservation system. Roadless areas qualify for wilderness recommendation if they meet certain criteria. The Caribou LRMP evaluated IRAs for their potential wilderness characteristics. Appendix C of the RFP discusses the individual IRAs and their wilderness character qualities. Appendix R discusses the re-inventory of the IRAs and the recommended management area prescriptions for managing the IRA.

The Caribou City Inventoried Roadless Area (IRA) is approximately 93,000 acres. This IRA is the second largest roadless area in the Caribou portion of the Caribou-Targhee National Forest, ranging from 6,000 feet above sea level near Palisades Reservoir to 9,803 feet at the top of Caribou Mountain. Portions of the Caribou City IRA have historic mining sites and the remains of two mining towns. High public interest has been expressed about this historic area. Portions of the IRA area also offer a unique recreation opportunity for the region. The core area of Caribou City IRA is currently managed as an RWA and is a very popular hunting area on the forest. This area is managed as non-motorized in summer and allows motorized travel in winter. The Idaho Roadless Rule (36 CFR 294) classifies the project area as Backcountry Restoration and Forest Plan Special Areas.

The 2003 Revised Forest Plan manages the northwestern portion of the Caribou City IRA under 2.1.4 (b) Caribou Mountain special emphasis area prescription. The plan manages the eastern portion of the Caribou City IRA as 1.3 (e) Recommended Wilderness and the southwest portion as 3.3 and 6.2 which are rangeland/restoration prescriptions. This proposed project lies in Prescription Area 2.1.4(b) within the IRA. This portion of the IRA was identified as a Forest Plan Special Area (FSPA) under the 2008 Idaho Roadless Rule. The 2008 Idaho Roadless Rule did not establish any management direction for, or that applies to any of these identified FPSAs. Instead the petition identified a preference that these lands be administered under the laws, regulations and other management direction unique to the special purpose of the applicable land classification. The Caribou RFP manages the historic portion of the Caribou City IRA under a special area prescription that emphasizes interpretation, research, and minimal facility development with summer motorized use on designated routes (4-189).

The Idaho Roadless Rule identified the Caribou City IRA as having the following resource characteristics:

Fisheries: Provides Yellowstone Cutthroat Trout Habitat
Wildlife: Linkage area for Canada Lynx; Great Gray Owl, Fringed Myotis and other sensitive and management indicator species occur; area has high values for wildlife
Water: The area contains no municipal water use.
Botanical: Payson's Bladderpod occurs in this roadless area.

Recreation: The primary recreation attraction is deer, elk, and moose hunting; the core of the roadless area offers the only primitive recreation experience on the forest; the northwest portion is popular for recreational gold panning; most of the area is open to snowmobiling;
Timber: No recent timber activity has occurred in the area.
Wildland Fire Use: Much of this area is managed for Wildland Fire Use: the application of the appropriate management response to naturally-ignited wildland fires to accomplish specific resource management objectives is predefined, designated areas outlined in Fire Management Plans.
Range: Livestock are authorized to graze most of the area.
Minerals and Energy: Patented and unpatented mining claims for locatable minerals exist in the area.
Landownership and Special Uses: Special Use authorizations include a buried fiber optic line and an above ground powerline along Tincup Highway.
Roads and Trails: The area has about 11 miles of trails and 4 miles of road open to motorized use in the summer and is open to snowmobiling in the winter.
Heritage: The area includes a basic historic management area.

After careful consideration during the 2002 Forest Planning effort, the Caribou National Forest determined that the 29,800 acres of the Caribou City IRA, would be recommended for Wilderness in the Revised Forest Plan as these acres possess the attributes and characteristics for designation into the Wilderness Preservation system. The boundary of the IRA was changed to reflect the Recommended Wilderness Area boundary. Summer motorized travel would not be allowed within the RWA, but winter travel would be (USDA, 2003).

Caribou City Recommended Wilderness Area

The 29,800 acre Caribou City Recommended Wilderness Area was created with the 2003 Caribou RFP. Recommended wilderness boundaries are considered for reasons of manageability and to exclude major road intrusions. Watershed boundaries, prominent ridges or distinct features that are definable on the ground help towards management and enforcement. (RFP 3-203).

As described in the Caribou City IRA, the area possesses mixed topography, basins with rocky mountain ridges, abundant wildlife, and opportunities for remoteness and solitude, primitive recreation and challenging experiences along with the area's mining history. Use occurs mainly on established trails and is relatively low within this RWA, with the exception of the fall hunting season.

The Caribou City IRA was identified as having the following wilderness character:

Naturalness – considered high with evidence of some human activities such as unimproved roads and historic and current mining activity
Remoteness and Solitude – rated as high because of the area's large size
Opportunities for primitive recreation and challenging experiences – considered high due to large, contiguous acreage
Special features or attributes – include good wildlife habitat, primitive non-motorized recreation and historic mining areas

Manageability – considered fair along roadless boundaries, due to road intrusions. A large core area could be achieved by locating boundaries on natural features, such as watershed or topographic ridges

There are existing motorized routes within the IRA relatively close to the RWA. Trail 452 ends approximately ¼ mile away from the RWA boundary. In addition, the Tin Cup Scenic Byway can be seen from various locations in the RWA.

Environmental Consequences

Effects Common to All Action Alternatives

- Motorized recreational vehicle use would contribute to noise, which has the potential to impact some visitors' recreation experience.
- The addition of a motorized route could concentrate use, which would lead to visitor displacement, and negatively affect some visitor's recreation experiences.
- Conflicts between motorized and non-motorized uses could occur on all designated routes.

Alternative 1 – No Action

Under the no action alternative, a motorized route would not be created from Morgan Meadows to Caribou City. No new proposed trails or connectors would occur. Caribou City can be accessed by the McCoy Creek and Anderson Creek Roads. Non-motorized users would still be able to access and use the area in its current condition.

There are currently 12.36 miles of motorized route within the IRA. Under Alternative 1, both motorized and non-motorized users will continue to utilize the area. The fall hunting season would continue to be the largest draw for recreation and trail use. It is expected that recreation use in the area will increase if private lands in the area are developed. The OMRD would not change with Alternative 1. Conflict of use between motorized and non-motorized uses within the IRA would continue to occur and possibly escalate.
The RFP designated 28,900 acres of the Caribou City IRA as a Recommended Wilderness Area as these acres possessed the attributes and characteristics for designation into the Wilderness Preservation system.The Caribou City Recommended Wilderness Area would continue to provide visitors with challenging, primitive and unconfined types of recreation, feelings of solitude, a spirit of adventure, and a sense of self-reliance.

The forest completed a GIS analysis that calculated the existing acres of the RWA that are affected by a motorized road or trail within the IRA. Currently within the RWA, approximately 19,549 acres are visually affected by a motorized road or trail; approximately 9,653 acres are not affected by a motorized road or trail.

Table 22. Resource Indicators and measures for Alternative 1.

Resource Element	Resource Indicator	Measure (Quantify if possible)	Alternative 1
Recreation	The miles of new motorized trail within the Caribou City	Miles	0 Miles

	IRA.		
Roadless and RWA	The effects to roadless values and wilderness characteristics within the Caribou City IRA	Roadless Values Wilderness Characteristics	A motorized trail would not be constructed. There would be no change to the wilderness characteristics or roadless values.
RWA	Acres of Visual Effects to the Caribou City RWA	Acres of visual impacts	19,549 acres
RWA	Change in Noise Effects to the Caribou City RWA	Increase in Decibels of Sound	0

Alternative 2 – Proposed Action

Direct and Indirect Effects

Resource Indicator and Measure 1 – Miles of New Motorized Trail within the Caribou City IRA

The proposed route is located entirely within Prescription Area 2.1.4(b). This route would provide a legal motorized opportunity for visitors to experience the history and beauty of the area by providingan additional 8 miles of new construction/reconstruction with Alternative 2. Designating this route as a motorized trail would provide an enhanced ATV experiencefor the public and would adopt the route onto the forest designated trail system.

Motorized route designation could displace non-motorized users andaffect visitor satisfaction. Some visitors may feel offended or defensive if the activity they prefer to participate in is deemed as inappropriate by others or if their experience is disrupted or perceived as undesirable.

Caribou Mountain would continue to receive both motorized and non-motorized recreation use. With the new and improved motorized trail, recreation use would increase more than the no action alternative. During hunting season, hunters would be displaced and conflict of use between non-motorized and motorized use could escalate. This alternative has the highest potential to displace hunters and non-motorized users of the area who would find they no longer have a quiet area to hunt in.

The designation of motorized opportunities, particularly by vehicle class, may affect non-motorized opportunities. Perceived conflict of use could occur between the motorizedusers when travel routes are shared with non-motorized use.

Open motorized road densities (OMRD) are the miles of designated motorized route per square mile of the prescription area and are used to manage recreation settings. Although there will be additional miles of motorized route within the IRA, it is still within the allowable OMRD standards set forth in the forest plan. This alternative would increase the OMRD for the prescription area from 1.1 miles to 1.3 miles of motorized route per square mile.

Resource Indicator and Measure 2 – Effects to Roadless Values and Wilderness Characteristics within the Caribou City IRA

The analysis for the roadless resource will disclose the potential effects to roadless characteristics and wilderness attributes and determine if, or to what extent it might affect future consideration for wilderness designation. The 1964 Wilderness Act identified attributes to determine the wilderness qualities of an area. Forest Service Handbook (FSH) 1909.12, 72.1 discusses the wilderness attributes.

Wilderness Management for the Forest Service is found in FSM 2320. Although the RWA is not yet designated as wilderness FSM2320.3-5 states: Because wilderness does not exist in a vacuum, consider activities on both sides of wilderness boundaries during planning and articulate management goals and the blending of diverse resources in forest plans. Do not maintain buffer strips of undeveloped wildland to provide an informal extension of wilderness. Do not maintain internal buffer zones that degrade wilderness values.

Effects to Roadless Characteristics

A discussion of the Caribou City IRA roadless characteristics is discussed under the affected environment section above.

Effects to Roadless Characteristics include the consideration of 1) Soil, water and air resources; 2) Sources of public drinking water; 3) Diversity of plant and animal communities; 4) Habitat for TES and species dependent on large undisturbed areas of land; 5) Primitive and semi-primitive classes of recreation; 6) Reference landscapes for research study or interpretation; 7) Landscape character and integrity; 8) Traditional cultural properties and sacred sites; and 9) Other locally unique characteristics.
The route design considered the suitability of the soils in the project area, and design features such as reduced grade of the trail mitigate some of the naturally limiting engineering properties of the native soil material for trail construction. The proposed activities would not have an effect on soils resources. The trail construction/reconstruction could encourage more people to recreate closer to home, reducing emissions from full-sized vehicles, but the decrease would be a small percentage of existing full-sized vehicle travel. Measurable impacts to air quality are not likely. There are no known unique or critical watershed features in the IRA.

The proposed route would not have any effects on public drinking water systems/sources as none exist within the project area.Recreational activities such as motorized travel on roads and trails can serve as vectors for invasive plant introduction and spread. The implementation of Early Detection Rapid Response monitoring and treatment is expected to keep the potential acres of infestation at a minimum. Using the Fire and Invasive Assessment Tool procedure, the project area ecosystems were ranked as having a high relative resilience to disturbance and resistance to invasive annual grasses. Risk for annual grass infestations are low. However, there would be habitat loss and fragmentation, harassment, displacement and disturbance to wildlife, and potential weed expansion. The Canada Lynx is the only ESA listed species potentially within the project area, at a March 19, 2016 meeting with USFWS, a no effect determination was made. See Wildlife Report for additional information.

Primitive recreation opportunities are available for those seeking an undeveloped experience in the RWA. Semi-primitive experiences are available in the IRA. There would be effects on semi-primitive classes of recreation.

The landscape within the project area includes mining activity, grazing and both motorized and non-motorized recreation. The IRA provides many scenic vistas of the surrounding area, the proposed project would affect the landscape character by building a motorized route through a large expanse of previously reclaimed and undisturbed area. Interpretation of the area is ripe due to the historic mining, recreation and grazing that has occurred in the area. Although the trail would be constructed/reconstructed in a manner to minimize resource damage, the trail would be a direct human-caused deviation on the landscape.

No traditional cultural properties or sacred sites would be affected with the implementation of Alternative 2 as none are known to exist within the project area. Other locally unique characteristics are evidence of mining history that has occurred throughout the years in the area. The project would benefit this activity by providing interpretation of mining history at sites along the route.

In summary, Alternative 2, has the highest potential to displace visitors utilizing the area, contribute to noise, dust and potential conflict of use, especially during fall hunting season due to the proposed route going through a previously undisturbed area in the IRA.

Effects to Wilderness Attributes

Effects to Wilderness Attributes include the consideration of 1) Untrammeled quality; 2) Naturalness; 3) Outstanding opportunities for solitude or a primitive and unconfined type of recreation; 4) Special features; and 5) Manageability.

There have been significant disturbances within prescription 2.1.4(b) including mining and the construction of roads and trails which are visible from many areas in the IRA; which has effected the untrammeled quality and natural appearance of the area. The proposed routewould lead to increased motorized use. The east and north areas of the IRA display untrammeled qualities because of the evidence of human manipulation. Due to the large size of the IRA, it is unlikely that this use would increase degradation of natural processes or further degrade the already lost untrammeled quality of the area.

The naturalness of the IRA would be impacted with implementation of the proposed action. There are visual impacts in the IRA associated with current motorized recreation and mining activity. Portions of the IRAare free from human impacts and may possess functioning ecological systems. The proposed route is in a natural or unroaded area and would affect the naturalness of the area between the RWA boundary and the eastern portion of Prescription 2.1.4(b). The implementation of the proposed routewould likely result in continued visible and apparent ecological modifications to the immediate area.

Visitors seeking a primitive recreation experience seek quiet areas with little evidence of human manipulation or disturbance. Use of this trail would increase with its designation as a motorized route.

The Caribou City IRA is rated high for unique land forms and non-motorized recreation needs. The implementation of Alternative 2 would hinder the undeveloped character of the area by constructing a trail within a large undeveloped piece of land.The IRA is surrounded by roads, but one can find remote and undeveloped areas in the interior portion of the IRA.

The IRA allows for some opportunities for solitude; however, the proposed route would diminish this opportunity because it would bisect an undisturbed area. The construction of the 1.5 miles of trail along the ridgeline west of Jackknife Basin to an old reclaimed gold road are within ½ mile of the west RWA boundary and can be heard and seen from the portions of the RWA. The use of heavy equipment will take 1-2 seasons to construct, depending on equipment and conditions. Equipment noise associated with the construction phase would be concentrated in areas depending upon the width of trail and type of work conducted. Equipment noise would be short term and last as long as the construction phase. ATV noise would also increase with the implementation of Alternative 2. However, opportunities for solitude are already reduced in portions of the IRA due to its proximity to roads and trails. The IRA extends north to the McCoy Creek Road, a highly traveled full size vehicle road for approximately 5 miles along the IRA boundary. The RWA also comes fairly close to Caribou City, a busy historic site within the IRA. Remoteness and solitude in the remainder of the IRA would not be affected in the long term due to the area's large size.

The opportunities for primitive recreation and challenging experiences with the implementation of Alternative 2 would be affected in the area of the proposed route because of associated noise, dust and visuals. However, the opportunities to experience primitive recreation and challenging experiences within the IRA exist in other places in the IRA and the RWA; allowing users to feel a part of nature, with a high degree of challenge and reliance on outdoor skills.

Special features or attractions for the IRA include good wildlife habitat, primitive non-motorized recreation, and historic mining areas. Those using the IRA near the proposed route may have frustrations with the proposed route, however, due to the size of the IRA, they should be able to experience the special features and attributes further away from the proposed route.

Manageability is rated fair along the exterior boundary of the IRA due to motorized road and trails. The proposed route lies within Prescription Area 2.1.4(b), which is managed as a Forest Plan Special Area, management direction from the Idaho Roadless Rule would not apply. This special emphasis area is a unique historical area with management focused on allowing visitors to experience the mining history of the area, providing economic opportunities for outfitter and guides, educational opportunities for the public and research opportunities for resource managers and academic professionals. Manageability within Prescription Area 2.1.4 (b) would be considered fair, however outside of this prescription area the manageability would be higher.

During the dry season, dust from vehicles on the trail is visible for miles.

The 2003 RFP process designated 28,900 acres of the IRAas suitable for recommended wilderness. Due to the large size of the IRA and considering that Prescription 2.1.4(b) is managed under the RFP direction and not the Idaho Roadless Rule, this proposed project will not affect suitability for wilderness designation.

Resource Indicator and Measure 3 – Noise and Visual Effects on the Caribou City Recommended Wilderness Area

Visual Impacts

The Caribou City RWA is surrounded by motorized roads and trails from various distances. Within the Caribou City RWA boundary, approximately 19,549 acres are currently visually affected by a motorized road or trail depending upon the location. There are 7,069 acres of the RWA where a motorized road or trail cannot be seen. Alternative 2 would add an additional 2,583 acres of visual impact in the RWA along Trails 447 and 449 and some of the higher elevations within the RWA. Due to the number of visual motorized routes in the IRA, users of the RWA would be likely to experience a decrease in the sense of solitude and diminished scenic quality depending upon their location with this alternative.

The Visual Quality Objectives (VQO) for Alternative 2 include Partial Retention, Modification. Under Partial Retention, human activity may be evident, but must remain suborindate to the characteristic landscape. Human activity may dominate the characteristic landscape but must, at the same time, follow naturally established form, line, color and texture. It should appear as a natural occurrence when viewed in foreground or middleground (RPF Glossary-38).

There are four rating levels of scenic integrity within the Caribou City IRA. Approximately 632 acres adjacent to the Tin Cup Scenic Byway rate as retention (high). About 63,150 acres are managed for partial retention (moderate), 14,946 acres rate as modification (low) and 388 acres rate as maximum modification (very low). (RFP Appendix R-33) The proposed route for Alternative 2 travels mainly through partial retention (moderate), and a mile or so of the route goes through modification (low). The proposed route would remain subordinate to the landscape within the IRA because of trail design, utilization of native materials and natural colors for retaining walls and bridges.

Sound Impacts

The State of Idaho's noise abatement code (Idaho Code 67-7125) requires that ATVs shall at all times be equipped with a noise suppressing system or other device which limits noise emission to a base level of not more than 96 decibels when measured on the "A" scale using standards and procedures established by the Society of Automotive Engineers (SAE), specifically SAE standard J1287 (June, 1988).

Travel Management decisions have the potential to change the type of vehicles that use certain areas of a district. A concern raised during scoping for the Winschell Dugway Motorized Trail system was the impact that noise from OHVs and other motorized vehicles has on the quality of users' experiences. Non-motorized users commented that the noise from ATVs detracts from the natural setting they wish to enjoy. Many people enjoy recreating on public land to escape the noise of modern civilization. The natural sound-scape and tranquility is a condition that they seek as part of their recreational experience. The entire Forest is affected by noise in some way, whether it is ambient noise from wind in the trees, water flowing over rocks, or human created noise from airplane flights, motorized vehicles and equipment, or the sound of gunshots. Motorized recreational vehicle use would contribute to noise, which has the potential to impact some visitors' recreation experiences.

Non-motorized users can experience noise without seeing a motorcycle or ATV. There is a great difference in opinions regarding the effects on a person's recreational experience. Some people using non-motorized modes of travel become upset when they encounter or hear motorized equipment. Non-motorized users can become dissatisfied, disappointed, or angry when recent motorized use has changed.

"Noise is a pollutant. While its physical and emotional effects are difficult to define quantitatively, the noise level itself can be measured. Many different properties affect the noise level of a specific source type. Noise level depends on the distance from the noise source and the attenuation of the surrounding environment" (Timerson).

Sinah and Labi (2007) explain the types of sound sources and how the effect of distance attenuation depends on the type of sound sources. There are two types of sound sources, point and line. In cases where the noise origin is a single location, the source is referred to as a point source. Examples of point sources include a boat whistle, a single truck cruising on a highway, or a single aircraft flying overhead. A linear extrusion of a point source in space is considered a line source. Examples of a line source include a highway (with a uniform traffic flow).

Timerson (1999) explains that addition and subtraction of decibels is often necessary for estimating total noise levels or background noise. Because decibels are measured using a logarithmic scale, conventional linear mathematics cannot be used. The most convenient way to perform simple arithmetic functions involving logarithmic measurements is to use the doubling rules. These rules provide an accurate estimate of the effect distance and multiple sources have on measured sound pressure level. When the distance is doubled from a line source the sound level decreases three decibels and when the distance is doubled from a point source the sound level decreases six decibels. Further, Timerson explains, that a doubling of sound energy yields an increase of three decibels (from a single ATV to two ATVs).

The interaction of a sound wave with features of the earth's surface causes excess attenuation above what would be expected from mere geometric spreading. Excess attenuation effects are related to soil type, nature of the ground cover, and the surface topography. Ground effects are generally difficult to predict. A value of approximately 4.5 dB for each doubling distance has been found to be applicable for absorptive surfaces (vegetative cover)" (Sinah, et al., 2007).

Sound impacts were estimated based on the information provided by Timerson and Sinah and Labi, as discussed above. The table below summarizes the calculations that were made to estimate decibels of sound from ATVs using the newly constructed trail that may be heard in the RWA.

Table 23. Estimated decibels for noise with absorptive surfaces

Distance From Observer(feet)	Decibels for Absorptive Surfaces, single ATV (dB)	Doubling of Sound Energy (2 ATVs) (dB)
50	96	99
100	91.5	94.5
200	87	90
400	82.5	79.5
800	78	81
1200	75.75	78.75
1600	73.5	76.5
2400	71.25	74.25
3200	69	72

The numbers above represent a "worse case" scenario. The numbers are representative of the sound a person may hear when there is excess attenuation. It is assumed that trees, ridgelines and other natural barriers found in the forest would decrease the level of sound a user would experience. Based on the above sound analysis, Alternative 2 would have the largest sound impact (93.75-96.75dB) due to the trail being approximately 73 feet (at its closest point) from the RWA boundary. In addition, there are multiple places along the proposed route where the trail goes near the RWA. These sound levels are expected to have a minimal impact on a user of the RWA. The estimated sound levels that are expected from use on the ATV routes are comparable to a garbage disposal and the sound of an alarm clock. The perceptions of these sounds are subjective based on an individual user and may impact some individuals more than others.

The impacts of Alternative 2 would be a reduction in naturalness, solitude and primitive recreation due to ongoing visual impacts associated with the trail, including dust, noise and motorized vehicles. All would impact opportunities for solitude and quiet recreation because they represent a motorized experience rather than a primitive experience.

Table 24. Resource Indicators and Measures for Alternative 2 direct/indirect effects

Resource Element	Resource Indicator	Measure (Quantify if possible)	Alternative 2 Direct/Indirect Effects
Recreation	The miles of new motorized trail within the Caribou City IRA	Miles	8 miles of additional trail in the IRA.
Roadless and RWA	The effects to roadless values and wilderness characteristics within the Caribou City IRA	IRA Worksheet. Caribou City Inventoried Roadless Area	The proposed project would not affect the areas suitability for wilderness designation with the implementation of Alternative 2.
Roadless and RWA	The effects of noise and visuals within the Caribou City RWA	Acres of visual impacts and decibels of Sound impacts within the	An additional 2,583 acres would be visually affected by a motorized road or

		RWA	trail within the RWA. Sound decibel of approximately of 93.75-96.75 could be heard approximately 73 feet away, similar to the sound of a garbage disposal.

Cumulative Effects – Alternative 2

Numerous other entities provide outdoor recreation opportunities within the area including Southeastern Idaho and Western Wyoming. Due to the vast amount of public land, the majority of use occurs on public land. As recreation on these lands within the area become more familiar to the recreating public, demand in these areas will increase. Use restrictions such as a travel management plan and others will be implemented to mitigate impacts to natural resources.

Roadless and RWAs are managed for low development and resource protection and enhancement.

Past and Present Actions:

Recreation and trails past and present activities that occur within the analysis area include motorized and non-motorized trails, hunting, hiking, camping, driving for pleasure, fishing, gathering forest products, snowmobile and other winter activities such as cross country skiing.

Forest management activities include trail construction, operation and maintenance, recreation and developed and dispersed camping, forest patrols and enforcement. Other agency management actions include fire prevention, timber harvest, rangeland grazing, weed control, road construction, operation and maintenance.

Future Activities:

In regards to public utilizing National Forest System lands, it is expected that the population will increase. Technological improvements to the type of vehicles people use to recreate will continue to expand and influence use.

Reasonably foreseeable activities include expanded visitation and population to the area which could increase use.

Natural Disturbance Events

Events such as floods, large wind events, and blizzards can create large areas of disturbance resulting in blocked trails or routes, drainage or erosion issues to trail treads, and hazardous conditions. Consequently, recreation activities, such as driving for pleasure, firewood cutting, wildlife viewing, visiting developed recreation sites, and accessing trails for hiking, biking, camping, and riding ATVs, may be prohibited for safety reasons.

Alternative 3

Direct and Indirect Effects

Resource Indicator and Measure 1 – Miles of New Motorized Trail within the Caribou City IRA

Alternative 3 would provide a legal motorized opportunity for visitors to experience the history and beauty of the area by providing an additional 3 miles of new construction or reconstruction of motorized trail. Designating this route as a motorized trail would provide an enhanced ATV experience for the public and would adopt the route onto the forest designated trail system. These 3 miles would tie into existing roads and trails to complete a route to Caribou City in the northern section of Prescription Area 2.1.4(b).

Motorized route designation could displace non-motorized users and affect visitor satisfaction. Some visitors may feel offended or defensive if the activity they prefer to participate in is deemed as inappropriate by others or if their experience is disrupted or perceived as undesirable.

Caribou Mountain would continue to receive both motorized and non-motorized recreation use. With the addition of interpretation and new and improved motorized trail, recreation use could increase.

When compared to Alternative 2, the 3 miles of new trail in Alternative 3 would be less impactful on the resources, hunters and visitors in the IRA as it is less than half of the mileage of Alternative 2, located further away from the RWA and doesn't bisect a large undisturbed area of land. Conflict of use between non-motorized and motorized use would diminish with this Alternative due to the lower number of trail miles. Non-motorized users could still hike, bike or horseback ride on the trail.

Effects to motorized users under this alternative would be an increase of designated routes, which would lead to an increase in noise levels depending upon the use the area received. Motorized users who yearn for challenging experiences may find a partial road-based system does not meet their desires. Increased use of these designated areas may result in higher maintenance needs and eventually lead to closure if resource damage becomes too great.

Open motorized road densities (OMRD) are the miles of designated motorized route per square mile of the prescription area and are used to manage recreation settings. Although there will be additional miles of motorized route within the IRA, it is still within the allowable OMRD standards set forth in the forest plan. This alternative would increase the OMRD for the prescription area from 1.1 miles to 1.2 miles of motorized route per square mile.

Resource Indicator and Measure 2 – Effects to Roadless Values and Wilderness Characteristics within the Caribou City IRA

Effects to Roadless Characteristics

A discussion of the Caribou City IRA roadless characteristics is discussed under the affected environment section above. Effects to Roadless Characteristics include the consideration of 1) Soil, water and air resources; 2) Sources of public drinking water; 3) Diversity of plant

and animal communities; 4) Habitat for TES and species dependent on large undisturbed areas of land; 5) Primitive and semi-primitive classes of recreation; 6) Reference landscapes for research study or interpretation; 7) Landscape character and integrity; 8) Traditional cultural properties and sacred sites; and 9) Other locally unique characteristics.

The route design considered the suitability of the soils in the project area, and design features such as reduced grade of the trail mitigate some of the naturally limiting engineering properties of the native soil material for trail construction. The proposed activities would not have an effect on soils resources. The trail construction/reconstruction could encourage more people to recreate closer to home, reducing emissions from full-sized vehicles, but the decrease would be a small percentage of existing full-sized vehicle travel. Measurable impacts to air quality are not likely. There are no known unique or critical watershed features in the IRA.

The proposed route would not have any effects on public drinking water systems/sources as none exist within the project area.Recreational activities such as motorized travel on roads and trails can serve as vectors for invasive plant introduction and spread. The implementation of Early Detection Rapid Response monitoring and treatment is expected to keep the potential acres of infestation at a minimum. Using the Fire and Invasive Assessment Tool procedure, the project area ecosystems were ranked as having a high relative resilience to disturbance and resistance to invasive annual grasses. Risk for annual grass infestations are low. Habitat loss and fragmentation, harassment, displacement and disturbance to wildlife, and potential weed expansion would be less with Alternative 3. The Canada Lynx is the only ESA listed species potentially within the project area, at a March 19, 2016 meeting with USFWS, a no effect determination was made. See Wildlife Report for additional information.

Primitive recreation opportunities are available for those seeking an undeveloped experience in the RWA. Semi-primitive experiences are available in the IRA. There would be minimal effects on primitive and semi-primitive classes of recreation.

The landscape within the project area includes mining activity, grazing and both motorized and non-motorized recreation. The IRA provides many scenic vistas of the surrounding area, Alternative 3 would not affect the landscape character as the 3 miles would be located in the norther section of the IRA in the area of Caribou City, which is close to other motorized routes and activity. Interpretation of the area is ripe due to the historic mining, recreation and grazing that has occurred in the area. The 3 miles trail would be constructed/reconstructed in a manner to minimize resource damage.

No traditional cultural properties or sacred sites would be affected with the implementation of Alternative 3 as none are known to exist within the project area. Other locally unique characteristics are evidence of mining history that has occurred throughout the years in the area. The project could benefit this activity by providing interpretation of mining history at sites along the route.

<u>Effects to Wilderness Attributes:</u>

A discussion of the Caribou City IRA wilderness attributes is discussed under the affected environment section above. Effects to Wilderness Attributes include the consideration of 1) Untrammeled quality; 2) Naturalness; 3) Outstanding opportunities for solitude or a primitive and unconfined type of recreation; 4) Special features; and 5) Manageability.

There have been significant disturbances within prescription 2.1.4(b) including mining and the construction of roads and trails which are visible from many areas in the IRA; which has effected the untrammeled quality and natural appearance of the area. Alternative 3 would add an additional 3 miles of motorized trail andwould increase motorized use in the northern portion of the IRA. The east and north areas of the IRA display untrammeled qualities because of the evidence of human manipulation. Due to the large size of the IRA, it is unlikely that this use would increase degradation of natural processes or further degrade the already lost untrammeled quality of the area.

The naturalness of the IRA would not be impacted with the implementation of Alternative 3. There are visual impacts in the IRA associated with current motorized recreation and mining activity in Prescription Area 2.1.4(b). Portions of the IRAare free from human impacts and possess functioning ecological systems.

Visitors seeking a primitive recreation experience could find this experience further into the IRA and RWA.

The Caribou City IRA is rated high for unique land forms and non-motorized recreation needs. The implementation of Alternative 3 would not hinder the undeveloped character of the area with the construction of 3 miles of trail in the vicinity of other motorized routes. The IRA is surrounded by roads, but one can find remote and undeveloped areas in the interior portion of the IRA.

The IRA offers opportunities for solitude. Alternative 3 would not affect solitude as much as Alternative 2 as it is only 3 miles located in an area surrounded by motorized routes. Visitors seeking solitude can find it in the RWA. The use of heavy equipment will take 1-2 seasons to construct, depending on equipment and conditions. Equipment noise associated with the construction phase would be concentrated in areas depending upon the width of trail and type of work conducted. Equipment noise would be short term and last as long as the construction phase. ATV noise would also increase with the implementation of Alternative 3 in the northern portion of the IRA in Prescription Area 2.1.4(b). However, opportunities for solitude are already reduced in this portion of the IRA due to its proximity to roads and trails. The IRA extends north to the McCoy Creek Road, a highly traveled full size vehicle road for approximately 5 miles along the IRA boundary. The RWA also comes fairly close to Caribou City, a busy historic site is within the IRA. Remoteness and solitude in the remainder of the IRA would not be affected in the long term due to the area's large size.

The opportunities for primitive recreation and challenging experiences would not be affected with the implementation of Alternative 3 as they exist in other places in the IRA and the RWA; allowing users to feel a part of nature, with a high degree of challenge and reliance on outdoor skills.

Special features or attractions for the IRA include good wildlife habitat, primitive non-motorized recreation, and historic mining areas. The implementation of Alternative 3 would minimally affect these special features.

Manageability is rated fair along the exterior boundary of the IRA due to motorized road and trails. Alternative 3 lies within Prescription Area 2.1.4(b), which is managed under the RFP rather than the Idaho Roadless Rule. This special emphasis area is a unique historical area with management focused on allowing visitors to experience the mining history of the area, providing economic opportunities for outfitter and guides, educational opportunities for the public and research opportunities for resource managers and academic professionals. Manageability within Prescription Area 2.1.4 (b) would be considered fair, however outside of this prescription area the manageability would be higher.

The high alpine ecosystem of the ridge is difficult to revegetate once construction activities have passed. During the dry season, dust from vehicles on the trail is visible for miles.

The 2003 RFP process designated 28,900 acres of the IRAas suitable for recommended wilderness. Due to the large size of the IRA and considering that Prescription 2.1.4(b) is managed under the RFP direction and not the Idaho Roadless Rule, this proposed project will not affect suitability for wilderness designation.

In summary, Alternative 3, has a lesser potential to displace visitors utilizing the area, contribute to noise, dust and potential conflict of use when compared to Alternative 2, especially during fall hunting season because the route will be less than half of the mileage in Alternative 2, and in the vicinity of existing roads and trails for the most part.

Resource Indicator and Measure 3 – Effects of Noise and Visuals on the Caribou City Recommended Wilderness Area

Visual Impacts

The Caribou City RWA is surrounded by motorized roads and trails from various distances. Within the Caribou City RWA boundary, approximately 19,549 acres are currently visually affected by a motorized road or trail depending upon the location. There are 9424 acres of the RWA where a motorized road or trail cannot be seen. Alternative 3 would add an additional 228 acres of visual impact in the RWA along Trails 447 and 449 and some of the higher elevations within the RWA. Due to the number of visual motorized routes in the IRA, users of the RWA would be not likely to experience a decrease in the sense of solitude and diminished scenic quality depending upon their location with this alternative.

The Visual Quality Objectives (VQO) for Alternative 3 include Partial Retention, Modification. Under Partial Retention, human activity may be evident, but must remain suborindate to the characteristic landscape. Human activity may dominate the characteristic landscape but must, at the same time, follow naturally established form, line, color and texture. It should appear as a natural occurrence when viewed in foreground or middleground (RPF Glossary-38).

There are four rating levels of scenic integrity within the Caribou City IRA. Approximately 632 acres adjacent to the Tin Cup Scenic Byway rate as retention (high). About 63,150 acres are managed for partial retention (moderate), 14,946 acres rate as modification (low) and 388 acres rate as maximum modification (very low). (RFP Appendix R-33) The proposed route for Alternative 3 travels mainly through partial retention (moderate), and a mile or so of the route goes through modification (low). The proposed route would remain subordinate to the

landscape within the IRA because of trail design, utilization of native materials and natural colors for retaining walls and bridges.

Sound Impacts

Please refer toTable 23. Estimated decibels for noise with absorptive surfaces above for information on sound impact analysis.

Based on the sound analysis, Alternative 3 would have a lesser sound impact (77.5 -80.5 dB) compared to Alternative 2 because the trail comes within approximately 1070 feet of the RWA boundary on the north end of the IRA in one location. These sound levels are expected to have a minimal impact on a user of the RWA. The estimated sound levels that are expected from use on the ATV routes are comparable to a normal conversation and the use of an alarm clock. The perceptions of these sounds are subjective based on an individual user and may impact some individuals more than others.

Table 25. Resource Indicators and measures for Alternative 3 – direct/indirect effects

Resource Element	Resource Indicator	Measure (Quantify if possible)	Alternative 3 Direct/Indirect Effects
Recreation	The miles of new motorized trail within the Caribou City IRA	Miles	3 miles of additional trail in the IRA.
Roadless and RWA	The effects to roadless values and wilderness characteristics within the Caribou City IRA	IRA Worksheet. Caribou City Inventoried Roadless Area	The proposed project would not affect the areas suitability for wilderness designation with the implementation of Alternative 3.
Roadless and RWA	The effects of noise and visuals within the Caribou City RWA	Acres of visual impacts and decibels of Sound impacts within the RWA	An additional 228 acres would be visually affected by a motorized road or trail within the RWA. Sound decibel of approximately of 77.5 - 80.5 could be heard approximately1/4 mile away, similar to the sound of an alarm clock or casual conversation.

Cumulative Effects – Alternative 3

Past, Present, and Reasonably Foreseeable Activities Relevant to Cumulative Effects Analysis

Numerous other entities provide outdoor recreation opportunities within the area including Southeastern Idaho and Western Wyoming. Due to the vast amount of public land, the majority of use occurs on public land. As recreation on these lands within the area become more familiar to the recreating public, demand in these areas will increase. Use restrictions

such as a travel management plan and others will be implemented to mitigate impacts to natural resources.

Roadless and RWAs are managed for low development and resource protection and enhancement.

Past and Present Actions:

Recreation and trails past and present activities that occur within the analysis area include motorized and non-motorized trails, hunting, hiking, camping, driving for pleasure, fishing, gathering forest products, snowmobile and other winter activities such as cross country skiing.

Forest management activities include trail construction, operation and maintenance, recreation and developed and dispersed camping, forest patrols and enforcement. Other agency management actions include fire prevention, timber harvest, rangeland grazing, weed control, road construction, operation and maintenance.

Future Activities:

In regards to public utilizing National Forest System lands, it is expected that the population will increase. Technological improvements to the type of vehicles people use to recreate will continue to expand and influence use.

Reasonably foreseeable activities include expanded visitation and population to the area which could increase use.

Natural Disturbance Events

Events such as floods, large wind events, and blizzards can create large areas of disturbance resulting in blocked trails or routes, drainage or erosion issues to trail treads, and hazardous conditions. Consequently, recreation activities, such as driving for pleasure, firewood cutting, wildlife viewing, visiting developed recreation sites, and accessing trails for hiking, biking, camping, and riding ATVs, may be prohibited for safety reasons.

Summary

Both Alternatives 2 and 3 would meet the Purpose and Need. Alternative 3 would be less impactful on the resources, hunters and visitors in the IRA as it is less than half of the mileage of Alternative 2, located further away from the RWA and doesn't bisect a large undisturbed area of land. Conflict of use between non-motorized and motorized use would diminish with this Alternative due to the lower number of trail miles. Effects to visuals, noise, roadless characteristics and wilderness attributes would be less with Alternative 3.

Table 26. Summary comparison of alternatives.

Resource Element	Resource Indicator	Measure (Quantify if possible)	Alternative 2 Direct/Indirect Effects	Alternative 3 Direct/Indirect Effects
Recreation	The miles of new motorized trail within the Caribou City IRA	Miles	8	3
Roadless and RWA	The effects to roadless values	Roadless Values	Roadless characteristics would be affected, however, the proposed project would not affect the areas suitability for wilderness designation due to the project area managed under the RFP in Prescription Area 2.1.4(b).	Roadless characteristics would not be affected, however, the proposed project would not affect the areas suitability for wilderness designation due to the project area managed under the RFP in Prescription Area 2.1.4(b).
Roadless and RWA	Effects to Wilderness Characteristics	Wilderness Characteristics	Wilderness qualities and attributes would be affected, however, the proposed project would not affect the areas suitability for wilderness designation due to the project area managed under the RFP in Prescription Area 2.1.4(b).	Wilderness qualities and attributes would not be affected, Alternative 3 would not affect the areas suitability for wilderness designation due to the project area managed under the RFP in Prescription Area 2.1.4(b).
Roadless and RWA	Visual Impacts to the Recommended Wilderness Area	Acres of visual impacts	2,583 acres	288 acres
RWA	Noise Impacts to the Recommended Wilderness Area	Sound (decibels)	93.75 – 96.75 decibels	77.5 – 80.5 decibels

Wildlife

This section discusses the components of the wildlife resource that could be affected by the proposed activities. This information is extrapolated directly from the Wildlife Resources Specialist Report*(Green, 2016a)*. The wildlife resource analysis focuses on the potential for the project to have adverse impacts on wildlife species and their habitats. The analysis identifies the existing wildlife resource condition and discloses the potential effects on wildlife resources from the proposed activities.

Issues

The potential impacts of roads and motorized trails are well documented. As described in the FEIS for the Caribou National Forest (CNF)Revised Forest Plan (RFP)(USDA, 2003)on pp. D-26-29, motorized trails contribute to habitat loss and fragmentation, provide access for

hunting, trapping, and collection, provide movement corridors for weeds, cause harassment and disturbance of wildlife, cause wildlife displacement and avoidance, and increase potential for negative interactions with wildlife and increase erosion and sedimentation of streams. Due to the expected impacts of motorized trail construction, the Winschell-Dugway Motorized Trail project could have impacts on wildlife species and their habitat.

Resource Indicators and Measures

Resource indicators and measures were developed based on the desired future conditions that are identified in the CNF RFP (2003) and the CNF Travel Plan (2005). The following indicators provide a basis for comparing the direct and indirect effects of the project alternatives to the wildlife resource. As it relates to the Winschell Dugway Motorized Trail Project, these Desired Future Conditions would ensure that Forest Service managed land within the analysis area contributes to habitat for species for which the state has developed management plans and that occur within the analysis area (primarily for mule deer and elk). Similarly, for federally listed species and sensitive species occurring within the analysis management area, management of habitats would contribute to their recovery (if listed) or preclude them from being federally listed (if sensitive).

Table 27. Resource Indicators and measures for assessing effects to wildlife resources.

Resource Element	Resource Indicator	Measure (Quantify if possible)	Used to address: P/N, or key issue?	Source
Wildlife (FS Sensitive Species and those species with State Management Plans occurring in the analysis area)	Amount or Degree of Disturbance, Habitat Loss, and/or Fragmentation, etc	Miles of new motorized trail	No	CNF 2003 Revised Forest Plan.Wildlife DFC, Issues and Indicators worksheet (Green 2016)
Wildlife (FS Sensitive Species and those species with State Management Plans occurring in the analysis area)	Amount or Degree of Disturbance, Habitat Loss, and/or Fragmentation, etc	Open Motorized Route Density (mi/mi²) in the Caribou Mountain Special Emphasis Area Prescription area	No	CNF 2005 Travel Plan.Wildlife DFC, Issues and Indicators worksheet (Green 2016)
FS designated Sensitive Species	Effects to FS designated Sensitive Species.	Determination of Effect	No	CNF 2003 Revised Forest Plan. Wildlife DFC, Issues and Indicators worksheet (Green 2016)

Methodology

Information Sources

A combination of CNF Wildlife White Papers (USDA-FS, 2010), Idaho Department of Fish and Game databases, applicable scientific literature, survey data and reports, USGS GAP analysis (USGS, 2016), monitoring data, aerial photos, known habitat types, and field visits have been used to determine the existing condition. The existing conditions for each species potentially present in the analysis area is then combined with the effects of motorized trail

construction and maintenance to disclose the potential impacts of the project. The analysis of potential effects considers current conditions and incorporates travel planning documents, and other literature where cited.

It is important to note the BA and BE are written to further analyze the impacts of the selected alternative, therefore, these documents will not be finalized until after a final decision has been made. For simplicity, the BA and BE are often combined into one document.

Incomplete and Unavailable Information

While all efforts were made to obtain the most up-to-date species presence information, it should be noted that the locations of specific notable features, such as the locations of sensitive raptor nests, are not completely known, both in the analysis area as a whole, nor within or adjacent to the footprint of the proposed trail, as described under Alternative 2 or 3.

Spatial and Temporal Context for Effects Analysis

The analysis area used to describe the existing conditions for the Winschell-Dugway Motorized Trail project consists of Forest Plan Prescription Area *2.1.4(b) Caribou Mountain Special Emphasis Area Prescription area*(within which the project occurs), and the 2 adjacent Forest Plan Prescription Areas *6.2* (b) *Tincup Rangeland Management Area* and *1.3* (e) *Caribou City Recommended Wilderness Area.*

While this is a large analysis area, it is used for the following reasons: several of the species analyzed are wide ranging, and the relatively large analysis area helps to ensure species presence and habitat within and adjacent to the project area is adequately described.

Further, given the wide range of mobility of wildlife species and the differing scales at which potential impacts can occur (site specific impacts to amphibians that could occur from impacts to a spring, versus impacts to large ungulate movements which occur at much larger scales) the larger potential impacts area is used to help ensure the larger scale impacts are included. The site specific impacts (within the larger analysis area) are addressed below, as appropriate.

Temporally, the construction of the trail is expected to occur over the course of 2 operating seasons, herein short-term construction related impacts will be defined as occurring within 2 years from the start date of construction. Long Term impacts are defined herein as "post-construction" impacts occurring during the use and maintenance of the trail and would be expected to occur as long as the trail remains open to motorized use, which for the purposes of this document is expected to occur into perpetuity.

Direct and Indirect Effects Boundaries

The spatial boundaries for analyzing the direct and indirect effects to wildlife are Forest Plan Prescription Areas *2.1.4(b) Caribou Mountain Special Emphasis Area* Prescription area (within which the project occurs), and the 2 adjacent Forest Plan Prescription Areas 6.*2 (b) Tincup Rangeland Management Area* and *1.3 (e) Caribou City Recommended Wilderness Area* because several of the species analyzed are wide ranging, and the relatively large analysis area helps to ensure species presence and habitat within and adjacent to the project area is adequately described. Also, while Direct Effects of trail construction would occur

within or adjacent to the trail footprint, Indirect Effects (such as changing movement patterns of large ungulates) occur at much larger scales.

The temporal boundaries for analyzing the direct and indirect effects are perpetuity because it is assumed the trail will remain open.

Cumulative Effects Boundaries

The spatial boundaries for analyzing the cumulative effects to wildlife are the same as the area used for analyzing existing conditions and the Direct/Indirect Effects, because this is a sufficiently large area that would be expected to capture all meaningful or measureable cumulative effects. Any other scales of analysis used in the cumulative effects analysis are described where used.

The temporal boundaries for analyzing the cumulative effects are into perpetuity, because the trail is not expected to be closed, and as long as maintenance and use of the trail is occurring, the impacts of motorized trail use (as previously described) will continue to occur.

Affected Environment

Threatened or Endangered Species

The Endangered Species Act (ESA) protects species which have been listed as Threatened or Endangered by the US Fish and Wildlife Service (USFWS). Under the ESA, Federal agencies must ensure that actions will not jeopardize the continued existence of listed species or adversely modify designated critical habitat. Section 7 of the ESA describes the requirements for Federal Agency actions and consultations with USFWS, in general.

This project was presented to the US Fish and Wildlife Service (USFWS) at the March 9th 2016 streamlining meeting. At that meeting the USFWS species list conveyed that the Canada Lynx was the only ESA listed species potentially present within the project area. A *No Effect* determination for Canada Lynx was made and the USFWS agreed with that determination. The *No Effect* determination for Lynx was made, in short, due to the lack of potential impacts to Lynx, no expected impacts to Lynx movement, and no expected impacts to Lynx prey. Given the *No Effect* determination for Canada Lynx, they will not be discussed further in this document.

Additional species were also discussed at this meeting, including Grizzly Bear, Ute Ladies'-tresses, Yellow-billed cuckoo, and Whitebark pine. While not required, because these species were not included in the official species list, determinations of *No Effect* were agreed to at this meeting as well. As a result of the *"No Effect"* determination, these species will not be discussed further in this document.

North American Wolverine: Currently the Wolverine are "Proposed Threatened." While wolverine denning habitat is known to have certain characteristic criteria, in general wolverine habitat is best described more in terms of adequate year-round food supplies in large, sparsely inhabited areas, rather than in terms of certain vegetation types or topography (USDA-FS, 2003). Denning habitat, characterized as rocky sites, such as north-facing boulder talus or subalpine cirques in forest openings (USFWS, 2010) and (USFWS, 2014),does exist in isolated areas of the analysis area. 8200' elevation is considered the minimum elevation for wolverine denning in Idaho (USFWS, 2010),and portions of the analysis area surrounding Caribou Mountain and Bald Mountain are above this elevation (see

map in project record). There are two documented observations of wolverines within the analysis area, one in 2006 in the McCoy Creek area, and one in the Tincup Mountain area in 2001(Idaho Fish and Wildlife Information System, 2016). Additional recent (within the last 5 years) observations of Wolverine have occurred across the Caribou National Forest. Although naturally occurring at low levels, presence of wolverines with the analysis area is known. The low levels of use is supported by the state management plan for wolverines(IDF&G, 2014), which shows the analysis area occurring in an area of predicted low use (p. 21).

Critical Habitat: As described in the 2016 Streamlining notes and the updated IPaC list (dated July 26, 2016, Consultation Code 01EIFW00-2016-SLI-0902) there is no USFWS Designated or Proposed Critical Habitat for any species within the analysis area.

Regional Forester Sensitive Species and Management Indicator Species (MIS)

The Regional Forester identifies Sensitive Species when population viability is a concern (USDA-FS, 2016). In addition, the Northern Goshawk, Columbian sharp-tailed grouse, and Greater sage grouse are the MIS species for the Caribou National Forest as described in the 2003 Revised Forest Plan(USDA, 2003).

Occurrence within the analysis area is described as "known", "probable", "not expected", or "no presence" based on the amount, distribution, and quality of suitable habitat in and around the project area; reviewing file information of suitable habitat, sightings; survey data; site visits; and/or personal knowledge of species and habitat. The terms "known," "probable," "not expected," and "no presence" are defined in more detail in the Wildlife DFC, Issues and Indicators worksheet(Green, 2016b).

The Wildlife Specialist Report identified *"No Impact"* for several species; these determinations were due to lack of presence or lack of species habitat within the project area. For these reasons, the following list of species will not be discussed further in this document: spotted bats, pygmy rabbit, trumpeter swan, harlequin duck, Columbian sharp-tailed grouse, greater sage-grouse, Columbia spotted frog, and boreal (western) toad. Detailed information for each of these species can be found in the Wildlife Specialist Report included in the project record.

Townsend's big-eared bat: This species occupies moist forests, as well as arid savannah and shrub steppe. It has been found foraging over sagebrush-grasslands, riparian areas, and open pine forests within the Greater Yellowstone Ecosystem ((USDA, 2003). Townsend's bats forage primarily on Lepidopteran's (moths and butterflies) (IDF&G, 2005b), but occasionally will forage on flies and beetles as well (USDA, 2003). Known maternity colonies occur well to the west of the analysis area on the Craters of the Moon National Monument (IDF&G, 2005b). Townsend's bats use a variety of day roosting habitats, including caves, cliffs, buildings, bridges, and tree cavities. (USDA, 2003) (Groves, et al., 1997).

There are no documented occurrences of Townsend's bats within the analysis area; however Townsend's bats have been documented to the south and on other areas of the Soda Springs Ranger District(USDA-FS, 2003) and (Idaho Fish and Wildlife Information System, 2016). While there are no documented occurrences within the analysis area, habitat for Townsend's big-eared bats and their prey exists within the analysis area, and they are known to occur in

adjacent areas. The presence of Townsend's big eared bats within the analysis area is probable.

Gray Wolf: Gray wolves were removed from the Endangered Species list on May 11, 2011 (USFWS, 2011). There are no known established packs within or adjacent to the analysis area. Several established packs are known to occur within 50 miles of the analysis area, the Pine Creek and Tex Creek Packs to the North in Idaho, and the Horse Creek pack to the Northeast in Wyoming (USFWS) and (Idaho Fish and Wildlife Information System, 2016). Given the suitable habitat occurring within the analysis area, the relative adjacency of nearby established packs, and that wolf observations have been recorded to the south of the analysis area, presence of wolfs within the analysis area is known, but expected to occur at relatively low levels.

Peregrine Falcon: Peregrine falcons are typically found in open country near rivers, marshes and lakes. Foraging habitat includes wetlands and riparian habitats; meadows and parklands; croplands; gorges and mountain valleys; and lakes which support good populations of small to medium terrestrial birds, shorebirds, and waterfowl. Cliffs are preferred nesting sites, but other tall manmade structures, such as towers and high rise buildings may be used as well (USDA-FS, 2003).

Peregrine falcons are known to occur within and adjacent to the Caribou National Forest (near Grays Lake, Grays Ridge, Soda Springs, and Last Chance Canal) (Moulton, 2008)and (USDA-FS, 2003). However, there are no known eyries in the analysis area, and no identified potential nesting habitat (USDA-FS, 2003), within the analysis area. There are no documented occurrences within the analysis area, but have been documented to the east near Palisades reservoir, and as mentioned, to the west at Gray's Lake (Idaho Fish and Wildlife Information System, 2016). While there is a lack of potential nesting habitat, there is foraging habitat within the analysis area and, while not documented, Peregrines may occur there intermittently during foraging activities. Presence of Peregrine Falcons within the analysis is probable.

Bald Eagle: While Bald eagles may be found in a variety of habitats they are found primarily near larger bodies of water including rivers, reservoirs and lakes (Groves, et al., 1997). On and adjacent to the CNF, nesting habitat is associated with rivers, lakes, and reservoirs, while wintering habitat is comprised mainly of major rivers and large lakes (USDA-FS, 2003), none of which occurs within the analysis area. There are no known (or expected) bald eagle nests located in the analysis area, the nearest known Bald eagle nests occur outside of the analysis to the east in the Star Valley/Palisades reservoir area, and to the southwest, south of Gray's Lake (Idaho Fish and Wildlife Information System, 2016). There are no documented occurrences of bald eagles within the analysis area (Idaho Fish and Wildlife Information System, 2016).

However, similar to Peregrine Falcon described above, while there is a lack of potential nesting habitat, and no documented observations, there is foraging habitat for Bald eagles within the analysis area and, they are expected to occur within the analysis area at least intermittently during foraging activities. Presence of Bald eagles within the analysis area is probable, it is expected to be limited to relatively short term presence occurring during foraging or flights through/over the analysis area.

Northern Goshawk: Suitable habitat (mature forested habitat with high canopy closure and open understories) occurs in forested areas throughout the analysis area. Mapping of capable/suitable habitat for MIS species was completed in 2012(Colt, et al., 2012), and as shown on Map 6 on p. 34 of that document, Northern goshawk habitat occurs across all portions of the analysis area (importantto note that that analysis was tiered to livestock grazing, and that Goshawk habitat was clipped to areas suitable for grazing, so it underestimates the total amount of available habitat).

As part of project level surveys, the proposed trail route was surveyed for Goshawks in 2012 (Maps and Data Sheets in the project record). No Goshawks, nests, or signs of nests were observed during these surveys, and as noted in the field notes, much of the area occurs in areas with sub-alpine fir, which, due to its structure, is not generally expected to provide nesting habitat for goshawks.

There are no documented observations of Goshawks within the analysis area (IFWIS 2016, and Caribou Targhee corporate GIS data,), and no known nest or territories within the analysis area (CTNF corporate GIS data and Goshawk Monitoring data) and (USDA-FS, 2003). However, while there are no documented nest, territories, or observations within the analysis area, there is known suitable habitat within the analysis area, and it is expected that Northern Goshawks occur in the analysis area, at least intermittently during foraging activities. As a forest raptor, it is worth noting that the potential for presence of Northern Goshawk is higher than for other sensitive raptor species (Peregrine Falcons and Bald eagles), as the analysis area and areas adjacent to the trail (forested areas) much more closely meet the habitat requirements of Goshawks. Presence of Northern Goshawks within the analysis area is Probable.

Great Gray Owl: Great Gray Owls forage primarily on voles, pocket gophers, and other small mammals throughout the year, utilizing mixed coniferous forests usually bordering small openings or meadows(USDA-FS, 2003). Several observations of Great Gray owls have occurred within the analysis area(Idaho Fish and Wildlife Information System, 2016) and large areas of suitable habitat exist within the analysis area. Great Gray Owl presence within the analysis area is known.

Flammulated Owl:Flammulated Owls are almost exclusively insectivorous, and are found in a variety of forest types (USDA-FS, 2003). While there are no documented observations within the analysis area (Idaho Fish and Wildlife Information System, 2016), suitable habitat occurs in the analysis area and they have been documented in other areas of the CNF.Flammulated Owl presence within the analysis area is probable.

Boreal Owl:While there are no documented observations of Boreal Owls within the analysis area, suitable habitat (mature Douglas-fir, mixed conifer, spruce-fir and aspen forests) occurs within the analysis area and they have been documented in other areas of the CNF. Boreal Owl presence within the analysis area is probable.

Three-toed Woodpecker:Suitable habitat (snags) occurs within the analysis area. Three-toed woodpeckers forage primarily on wood-boring insect larvae, but will also eat moth larvae, spiders, berries and cambium. These woodpeckers primarily excavate cavities in standing trees or snags, but will nest in a variety of habitats including riparian willows (USDA-FS, 2003). Large scale wildfires and insect epidemics are of particular benefit to three-toed woodpeckers, providing important habitat components (snags for nesting and insects for

foraging). There are no documented observations of Three-toed woodpeckers within the analysis area (Idaho Fish and Wildlife Information System, 2016), however, Three-toed woodpecker presence within the analysis area is probable.

Other Special Status Species and Species of Local Concern

Migratory Landbirds: Riparian areas, non-riverine wetlands, sagebrush and aspen woodlands are "priority A" habitats and conifer forested habitats/mountain shrubs are "Priority B and C" habitats (Intermountain West Joint Venture, 2005), all important for nesting migratory landbirds. The Idaho Bird Conservation Plan (Idaho Partners in Flight, 2000)identified Riparian, non-riverine wetlands, sagebrush shrublands, and Dry Ponderosa Pine/Douglas Fir/Grand Fir forests as the highest priority habitats for birds in Idaho (Note that only Douglas Fir occurs in the analysis area). Important Bird Areas (IBA's) are sites that provide essential nesting, migration, or wintering habitat for birds (Trail, 2016). No IBA's occur within the analysis area. Overall, Executive Order #13186 and the Memorandum of Understanding (MOU) between the Forest Service and the US Fish and Wildlife(USDA-FS and USFWS, 2008), along with the Forest Plan, guide the management of migratory bird habitat on land managed by the Forest Service.

Mule Deer and Elk: The analysis area contains important spring, summer and transitional habitat for mule deer and elk. Some winter use of the analysis area may occur, but as described below, this is expected to be minimal. Fawning and calving areas, while locations not specifically known, are expected to occur throughout the analysis area. Of particular importance are aspen stands and riparian areas, these areas are used heavily for foraging and reproductive activities (including parturition) and are present throughout the analysis area.

Big Game Winter Range: For the purposes of this analysis, "designated Big Game winter range areas are defined as the prescriptions areas 2.7.1(d) and 2.7.2 (d), as described and drawn in the CNF Revised Forest Plan (USDA, 2003). There are no designated Big Game Winter range areas within the analysis area. This is due primarily to the high elevations and normally deep snow levels occurring in the analysis area. While big game likely occur at least intermittently in the analysis area in the winter, winter use occurs primarily at lower elevations adjacent to the analysis area where areas of winter range have been designated. This project would not be expected to impact big game winter range.

Big Game Security Areas: Big Game security areas are defined as an area of cover over 0.5 miles from an open motorized route and over 250 acres and are important for limiting disturbance and hunting vulnerability to big game animals (but provides benefits to other animals as well). The analysis area overlaps a large security area, approximately 54,324 acres in size. This security area is, by far, the largest security area occurring on the Caribou National Forest (corporate GIS data, project record).

Open Motorized Route Density (OMRD): OMRD includes all open roads and motorized trails in a prescription area polygon, and is expressed in mi/mi^2. OMRD "ceilings were set for management areas in the Caribou Travel Plan Revision (USDA-FS, 2005), and were intended to achieve a desired recreation setting while minimizing wildlife disturbance. The current OMRD for the Prescription Area within which the proposed trail would potentially occur (*2.1.4(b) Caribou Mountain Special Emphasis Area Prescription area)* is 1.1 mi/mi^2 , with a ceiling of 1.5 mi/mi^2(USDA - FS, 2005).As described in the Forest Plan,(USDA-FS, 2003) and (Christensen, et al., 1993), OMRD's can be tied to elk habitat effectiveness, to benefit

summer habitat for elk and retain high use, OMRDs should be at 0.7 mi/mi^2 or less, for areas where big game management is a consideration, habitat effectiveness should be at a minimum of 50% which equates to an OMRD of about 1.9 mi/mi^2.

Environmental Consequences

Alternative 1 – No Action

No new motorized trail construction would occur under this alternative. The existing condition for upland wildlife and habitat would continue current trends and the existing conditions would be maintained. Since no activities would occur there would be no potential for direct or indirect impacts to wildlife, and therefore there would be *No Effect* to North American Wolverine (as a Proposed Species under ESA) and *No Impact* on all other wildlife species. There would be no change to existing OMRD's or to the amount of mapped big game security area and thereforeimpacts to big game populations and survival are not expected under this alternative.

Table 28. Resource Indicators and Measures for Alternative 1

Resource Element	Resource Indicator	Measure	(Alternative 1)
Wildlife (FS Sensitive Species and those species with State Management Plans occurring in the analysis area)	Amount or Degree of Disturbance, Habitat Loss, and/or Fragmentation, etc.	Miles of new motorized trail	**0 Miles (No Change**)
Wildlife (FS Sensitive Species and those species with State Management Plans occurring in the analysis area)	Amount or Degree of Disturbance, Habitat Loss, and/or Fragmentation, etc.	Open Motorized Route Density (mi/mi²) in the Caribou Mountain Special Emphasis Area Prescription area	**1.1 mi/mi^2 (No Change)**
FS designated Sensitive Species	Effects to FS designated Sensitive Species.	Determination of Effect	**This alternative would have *No Effect* on Wildlife Species or their habitat**

Alternative 2 – Proposed Action

Direct and Indirect Effects

As previously described herein, the potential impacts of motorized trails are well documented. As described in the FEIS for the CNF RFP(USDA-FS, 2003)on pp. D-26 to D-29, motorized trails contribute to habitat loss and fragmentation, provide access for hunting, trapping, and collection, provide movement corridors for weeds, cause harassment and disturbance of wildlife, cause wildlife displacement and avoidance, and increase potential for negative interactions with humans. While described in more detail below, in short, all of

these impacts would be expected to occur (at least to some degree) under Alternative 2. It is also important to note that larger predatory species (such as wolverines) or larger wide ranging species requiring (or benefiting from) large blocks of undisturbed habitat (such as big game) would be the most likely to be adversely impacted by construction of the motorized trail.

Threatened and Endangered Species

North American Wolverine: Under Alternative 2, 7.75 miles of new motorized trail would be created, Open Motorized Route Density would increase from 1.1 mi/mi^2 to 1.3 mi/mi^{2}and the delineated security habitat would be split into two sections and decrease from 54,324 acres to 51,882(One section of 50,204, 1 section of 1,678 acres). While the analysis area would still serve as wolverine habitat, the proposed trail would contribute to habitat fragmentation and increase human activity in the area, both of which would be expected to reduce the value of the habitat for wolverines. Given the predicted low use of the area as described previously, while habitat quality for wolverines is expected to be reduced both site specifically and in the analysis area, the impacts would not rise to the level of jeopardizing the existence of the species. Therefore, as a proposed species, project impacts are "*Not Likely to Jeopardize the Continued Existence of the Species"*

Sensitive Species and Management Indicator Species (MIS)

Townsend big-eared bat:While unlikely, direct impacts to Townsend's big-eared bat could occur, potentially through the removal of roosting habitat (tree cavities, snags) during trail construction activities. Indirect impacts, though small scale and site specific, would be expected to occur, and would consist primarily of site specific impacts resulting from trail construction, consisting of direct loss or impacts to foraging habitat. No impacts to hibernacula would be expected to occur as none are known or expected to occur within the analysis area. While these direct and indirect impacts may impact individual or small numbers of bats, overall this impact would be minor and no impacts to the population viability would be expected to occur. Therefore, Alternative 2 "*May impact individuals or habitat, but will not likely contribute to a trend towards federal listing or cause a loss of viability to the population or species*."

Gray Wolf:The primary mechanism of direct effect to wolves would be displacement away from the footprint of the trail into other areas of the analysis area, which would occur both in the short term and over the long term during public use of the trail. The effects of this displacement are difficult to quantify, but would likely be minimal given that they would likely occur in the snow free season (when food resources are less limiting and fitness of individual wolves, barring other factors, is usually good). Overall, similar to other predators the increase in the amount of overall miles of motorized trail and trail density would reduce the habitat value of the analysis area. Indirect impacts to wolves would potentially occur through potential reductions in big game (described below). While impacts to individuals and habitat are expected under this alternative, overall these impacts would not be expected to reduce habitat or adversely impact enough individuals to the point where the viability of Gray Wolves would be reduced. Therefore, Alternative 2 "*May impact individuals or habitat,*

but will not likely contribute to a trend towards federal listing or cause a loss of viability to the population or species."

Peregrine Falcon:As previously described, presence of Peregrine Falcons is probable within the analysis area, but due to a lack of suitable nesting habitat and other factors, presence within the analysis area would be expected to be minimal, occurring intermittently during foraging activities. No direct impacts from the construction of the trail would occur. Further, construction of the trail would in no way be expected to impact Peregrine Falcon prey (primarily small birds) densities or availability. Since No direct impacts to Peregrine Falcons are expected, and there is no potential for Indirect effects (such as impacts to nesting sites or impacts to prey species), there will be *No Impact* to Peregrine Falcons under alternative 2.

Bald Eagle:Similar to Peregrine Falcon described above, Bald eagle presence within the analysis area is minimal, expected to be limited to relatively short term presence occurring during foraging or flights through/over the analysis area. No direct impacts to Bald eagles resulting from the construction of the trail would occur. Further, construction of the trail would not be expected to impact bald eagle foraging within the analysis area. No Impacts to winter use areas would occur. Since No direct impacts to Bald eagles would occur, and there is no potential for indirect effects (such as impacts to nesting sites or impacts to prey species), there will be *No Impact* to Bald eagles under alternative 2.

Northern Goshawk:As previously described, there are no known Goshawk territories within the analysis area, and site specific surveys along the proposed route of the trail did not observe any Goshawks, Goshawk nests, or signs of Goshawk nesting (Maps and Data Sheets in the project record). Goshawks however likely occur within the analysis area during foraging activities. Site specifically, the proposed construction of the trail would remove/impact small areas of habitat and habitat for prey species (would impact forested areas and small amounts of riparian). Design features associated with this alternative require additional surveys for Goshawks prior to project implementation, and implementing measures to avoid impacts to Goshawks if new nests are found, further reducing the potential for impacts. While no direct impacts to Goshawks are expected, impacts to habitat and prey species and their habitat would occur under this alternative, therefore, Alternative 2 "*May impact individuals or habitat, but will not likely contribute to a trend towards federal listing or cause a loss of viability to the population or species*."

Great Gray Owl, Flammulated Owl, and Boreal Owl:Overall, while impacts to forested areas will occur within and adjacent to the footprint of the trail, the mature forested stand conditions would only be minimally altered in the analysis area. While no known nests occur in the project area, the length of the proposed trail would be surveyed prior to project implementation to ensure no nests will be impacted. If nest are discovered, appropriate mitigations will be incorporated into the project to avoid impacts to the nests), therefore direct impacts to these species are not expected. Indirect impacts would be expected to occur, resulting from impacts to habitat (the removal of trees within the footprint of the trail and the removal of snags within and adjacent to the footprint of the trail). These impacts to habitat would also impact habitat for prey species that are utilized by these owls. However, while site specific impacts will occur potentially impacting individuals, no impact at the population level is expected. Therefore, Alternative 2, "*May impact individuals or habitat, but will not*

likely contribute to a trend towards federal listing or cause a loss of viability to the population or species."

Three-toed woodpecker: In general, given the foraging habits (primarily on wood boring insect larvae) and nesting habits (primarily occurring in standing trees or snags), there is little potential for impacts to Three-toed woodpeckers from trail construction. Impacts would be limited to a slight reduction in nesting habitat due to the removal of trees and snags occurring during trail construction. Required pre-project surveys would reduce the potential for impacts to any existing nests within the footprint of the trail, and design features would reduce the amount of snags felled to the extent possible. Alternative 2, "*May impact individuals or habitat, but will not likely contribute to a trend towards federal listing or cause a loss of viability to the population or species*" for Three-toed woodpeckers.

Mule Deer and Elk: As previously described, the analysis area contains important spring, summer and transitional habitat for mule deer and elk.

Big Game Security Areas: As previously described, the analysis area overlaps a large security area, approximately 54,324 acres in size. Under Alternative 2, 7.75 miles of new motorized trail would be created, which would not only reduce the acres of security habitat from 54,324 acres to 51, 882 acres but would also split the security area into two pieces, (One section of 50,204 acres, and 1 section of 1,678 acres) (See Alternative 2 Security Area Map, Project record). This split from one large block of security habitat, into two smaller areas help to visualize the fragmentation impacts that would result from the construction of the trail.

Open Motorized Route Density (OMRD): Under Alternative 2, OMRD would increase from 1.1 mi/mi^2 to 1.3 mi/mi^2. This increase would result in a OMRD that is further from the 0.7mi/mi^2 level that is described as being beneficial for elk and retaining high elk use, but below the 1.9 mi/mi^2 that is considered the minimum if big game management is a consideration, and also below the cap of 1.5 mi/mi^2 set for the prescription area during travel planning.

Overall, given the increase in the miles of motorized trail, the reduced amount of security area, and the increase in OMRD, big game species would be adversely impacted by the construction of the Winchell-Dugway project. This would result in displacement away from the trail corridor disturbance, increased vulnerability during the hunting season, human disturbance both during the construction of the trail and over the long term during public use of the trail. In many ways the scale and term of these impacts is difficult to estimate, and may vary by individual, the responses to trail construction and use may be limited to short term displacement, or may consist of long term abandonment of preferred foraging areas (USDA-FS, 2003). Noxious weeds adversely impact habitat for big game species and their spread would be facilitated by the construction of this trail. Any construction of or use of the trail that occurs in June would have the potential to disturb big game during fawning and calving, further increasing adverse impacts.

Migratory Birds: While habitat within the footprint of the trail would be removed, the requirements for pre-project surveys along with the requirement to protect any active nest that is located reduce, to the extent feasible, the potential for impacts to migratory birds. The amount of habitat removed within the trail footprint would not be expected to be sufficient to have any long term adverse impacts to any migratory bird species.

Resource Indicator and Measure 1
As shown below, approximately 7.75 miles of new motorized trail would be opened (designated as open to motorized vehicles less than 50" in width under Alternative 2. As described in the Wildlife DFC, Issues and Indicators Worksheet (Green 2016), the miles of trail opened to motorized use correlates to the impacts on wildlife, for example, the more trail that is constructed the more habitat fragmentation, the more spreading of weeds (which reduces habitat quality), and the more human access, etc. Less motorized trail construction would result in less of these impacts, (when compared with a longer trail).

Resource Indicator and Measure 2
As shown below, Open Motorized Route Densities would increase from 1.1 mi/mi^2 to 1.3 mi/mi^2. As described in the Wildlife DFC, Issues and Indicators Worksheet (Green 2016), since OMRDs are calculated at the scale of the Prescription area, OMRDs give a larger scale perspective on the impacts and consider not only the trail being built, but also the potential impacts combined with all the other roads and motorized trails currently open within the prescription area. OMRD's are also calculated to ensure the OMRD limits given for individual prescription areas are not exceeded, the OMRD limit for the *2.1.4(b) Caribou Mountain Special Emphasis Area Prescription area* is 1.5 mi/mi^2. So this project would maintain compliance with the 2005 travel plan. Reference the Big game section under Alternative 2 for additional discussion regarding the impacts of the OMRD increase.

Resource Indicator and Measure 3

As described in the Wildlife DFC, Issues and Indicators Worksheet (Green 2016), the determination for all designated Forest Service sensitive species of *"May Impact Individuals or Habitat, but will not likely contribute to a trend towards federal listing or loss of viability to the population or species (MIIH)*" the goal of implementing forest management that maintains habitat and /or precludes sensitive species from being listed is being met.

Table 29. Resource Indicators and Measures for Alternative 2.

Resource Element	Resource Indicator	Measure	Alternative 2
Wildlife (FS Sensitive Species and those species with State Management Plans occurring in the analysis area)	Amount or Degree of Disturbance, Habitat Loss, and/or Fragmentation, etc	Miles of new motorized trail[2]	**8Miles**
Wildlife (FS Sensitive Species and those species with State Management Plans	Amount or Degree of Disturbance, Habitat Loss, and/or Fragmentation, etc	Open Motorized Route Density (mi/mi²) in the Caribou Mountain Special Emphasis Area Prescription area	**OMRD increases from 1.1 mi/mi^2 to 1.3 mi/mi^2**

[2] Note: For the purposes of the Wildlife Analysis, the Miles of new motorized trail include all miles of new trail that will be designated open to motorized use (not just constructed) with this project. This is for the simple reason that potential impacts to wildlife are not limited solely to the ground disturbing activities. Even the "old roadbeds" that will be part of the trail, are not currently open to motorized use, and therefore not contributing motorized effects to habitat fragmentation, wildlife disturbance, etc., but they will if/when they are designated as an open motorized route.

occurring in the analysis area)			
FS designated Sensitive Species	Effects to FS designated Sensitive Species.	Determination of Effect	***"NI" or "MIIH"*****determinations for all Forest service Sensitive Species**

Cumulative Effects – Alternative 2
Past, Present, and Reasonably Foreseeable Activities Relevant to Cumulative Effects Analysis

Cumulative impacts result from the incremental impact of the action when added to other past, present and reasonably foreseeable future actions.

If there are no direct or indirect effects of the proposed action, there cannot be any cumulative effects, therefore, for those species with no presence within the analysis area (or with a *No Impact* determination), there will not be any cumulative effects.

The cumulative effects analysis considered the following actions, occurring within and adjacent to the analysis area. Since the primary mechanisms of effect resulting from the creation of motorized trails consists of habitat loss and fragmentation, facilitation of weed expansion, harassment and disturbance of wildlife, and wildlife displacement and avoidance, activities which result in additional similar effects are most likely to result in cumulative effects.

Past and Present Actions:

Recreation: Recreational activities within the analysis area includes motorized and non-motorized trail uses, cross-country hiking, camping, archery and rifle hunting for big game, upland game hunting, fishing, driving for pleasure, wildlife and bird watching, outdoor photography, gathering forest products, and geo-caching. Off-trail OHV use and/or use of unauthorized OHV trails is known to occur in the analysis area. In the winter the project area hosts non-motorized and motorized winter travel (snowmobiling, skiing and snowshoe travel).

Recreation management activities within the analysis area includes trail construction and maintenance, campground maintenance, dispersed camping management, road reconstruction and maintenance, travel plan enforcement and patrol,hazard tree removal and trail clearing (within campgrounds and designated motorized and non-motorized travel routes).

Other Actions:Fire related activities include fire suppression, prescribed fire, fuels treatment and fire rehabilitation. Grazing management includes allotment administration and fence construction and reconstruction, developing and maintaining facilities for water, salting and authorized grazing of cattle and sheep. Various integrated noxious weed treatments have been on-going for many years. A rich history of mining/dredging for gold exists in the analysis area, and these activities occur in the present, though at significantly reduced scales.

Future Activities:

The on-going processes of population growth, recreation specialization and new technologies have and will continue to shape the uses and conditions of the project area. Virtual technologies could reduce recreation visits to the project area; however, other technologies could encourage additional recreation use of the project area and public lands in general. Additional reasonably foreseeable future actions additional authorizations of small placer mining for gold in Caribou Basin and elsewhere, and the Caribou Connector Trail (motorized trail in the Tincup drainage).

Cumulative Effects

Besides livestock grazing, the heaviest and most apparent use within the project area is recreation. Recreational use of the area takes many forms some having no or minimal impact on wildlife (such as geo-caching or dog walking) with others having greater impacts on wildlife (dispersed camping, hiking, motorized trail use, etc). Many of the existing recreational impacts are either identical, or very closely mirror, the potential impacts of this project. Recreational impacts include, trampling vegetation and soil disturbances in high use areas, increased potential for the spread of noxious weeds and other non-native invasive species, developments and facilities and general human disturbances. Fire related activities occurring in the analysis area are expected to have minimal impacts, especially with regards to prescribed fire, fuels treatments, and fire rehabilitation. Generally, these are relatively small scale with many design features and/or mitigations included in project design to minimize or avoid potential impacts to wildlife. Further, due to a lack of fire within the analysis area (and the large scale reductions in the amount of early seral species i.e. Aspen) fire related disturbances are generally beneficial to wildlife habitat. Wildfires have occurred in and adjacent to the analysis area, and recovery from these is ongoing. Any future impact of a "wildfire" would be unknown, with many factors such as the size and intensity dictating the potential impacts it would have on wildlife.

As described above, the selection of alternatives 2, would result in habitat loss and fragmentation, provide access for hunting, trapping, and collection, provide movement corridors for weeds, cause harassment and disturbance of wildlife, cause wildlife displacement and avoidance, increase potential for negative interactions with wildlife and increase erosion and sedimentation of streams. These impacts, when combined with the other and the potentially more significant habitat related stressors, including the large scale loss of aspen stands (USDA –FS 2003b p. 3-75), the existing presence of invasive/noxious species, etc., mean that though the impacts of this individual project at the site specific scale are relatively minor, when added to the existing levels of fragmentation, weed infestations, human disturbance etc. the potential impacts are much greater and overall cumulatively greater impacts to biodiversity result. For example, with regards to fragmentation, as described above, the existing big game security area would be reduced in size and split into

two pieces (existing block of 54,324 acres split into One section of 50,204 acres, and 1 section of 1,678 acres) (See Alternative 2 Security Area Map, Project record). This results in the loss of 2,442 acres of security habitat. While this loss is substantial, when viewed at larger scales, it becomes immediately apparent that this impacted block of security habitat is by far the largest on the Caribou National Forest, and the reduction in size of this block of habitat, when combined with all other stressors on wildlife, becomes much more impactful. The reduction is size of the largest undisturbed block of land on the Caribou National Forest can be expected to make the long term conservation of special status species or species of interest more difficult, especially when considering the species that primarily benefit from these large blocks of undisturbed land such as deer, elk, moose, mountain lion, black bears, and wolverine.

While the specific "breaking point" (that point at which the combined impacts of all activities within an area, becomes too great, and a particular species no longer occurs in an area) of the special status species within the project area cannot be exactly known, the combined impacts of all activities, this project included, would move special status species occurring within the analysis area incrementally closer to that point.

Alternative 3

Direct and Indirect Effects

The Direct and Indirect Effects of Alternative 3 are identical to those described under Alternative 2, but given the shorter route, occur at a lesser extent as conveyed by resource indicators (Table 30. Resource Indicators and Measures for Alternative 3 below). For example, the 3.14 miles of new motorized trail proposed under Alternative 3 will have the same impacts as described for the 7 miles under Alternative 2 (i.e. will result in habitat fragmentation, disturbance, etc.), but given the fewer miles, the impacts would occur to a lesser extent). In addition, similar to Alternative 2 the large block of security habitat will be split into 2 pieces, and overall it will be reduced from 54,324 to 53,771 acres (a reduction of 553 acres as opposed to a 2,442 acre reduction under Alternative 2)

Resource Indicator and Measure 1

As shown below, approximately 3.14 miles of new motorized trail would be opened under Alternative 3. As described in the Wildlife DFC, Issues and Indicators Worksheet (Green 2016), the miles of trail opened to motorized use correlates to the impacts on wildlife, for example, the more trail that is constructed the more habitat fragmentation, the more spreading of weeds (which reduces habitat quality), and the more human access, etc. Less motorized trail construction would result in less of these impacts, (when compared with a longer trail).

Resource Indicator and Measure 2

As shown below, Open Motorized Route Densities would increase from 1.1 mi/mi^2 to 1.2 mi/mi^2. As described in the Wildlife DFC, Issues and Indicators Worksheet (Green 2016), since OMRDs are calculated at the scale of the Prescription area, OMRDs give a larger scale perspective on the impacts and consider not only the trail being built, but also the potential

impacts combined with all the other roads and motorized trails currently open within the prescription area. OMRD's are also calculated to ensure the OMRD limits given for individual prescription areas are not exceeded, the OMRD limit for the 2.1.4(b) Caribou Mountain Special Emphasis Area Prescription area is 1.5 mi/mi^2. So this project would maintain compliance with the 2005 travel plan.

Resource Indicator and Measure 3

As described in the Wildlife DFC, Issues and Indicators Worksheet (Green 2016), the determination for all designated Forest Service sensitive species of "*May Impact Individuals or Habitat, but will not likely contribute to a trend towards federal listing or loss of viability to the population or species* (MIIH)" the goal of implementing forest management that maintains habitat and /or precludes sensitive species from being listed is being met.

Table 30. Resource Indicators and Measures for Alternative 3

Resource Element	Resource Indicator	Measure	Alternative 3
Wildlife (FS Sensitive Species and those species with State Management Plans occurring in the analysis area)	Amount or Degree of Disturbance, Habitat Loss, and/or Fragmentation, etc	Miles of new motorized trail	**3 Miles**
Wildlife (FS Sensitive Species and those species with State Management Plans occurring in the analysis area)	Amount or Degree of Disturbance, Habitat Loss, and/or Fragmentation, etc	Open Motorized Route Density (mi/mi²) in the Caribou Mountain Special Emphasis Area Prescription area	**OMRD increases from 1.1 mi/mi^2 to 1.2 mi/mi^2**
FS designated Sensitive Species	Effects to FS designated Sensitive Species.	Determination of Effect	***"NI" or "MIIH"*determinations for all Forest service Sensitive Species**

Cumulative Effects – Alternative 3

Past, Present, and Reasonably Foreseeable Activities Relevant to Cumulative Effects Analysis

The Past present and reasonably foreseeable actions under Alternative 3 are identical to those described under Alternative 2.

Cumulative Effects

The cumulative effects under Alternative 3 would be identical to those occurring under Alternative 2, though to a lesser extent. For example, the adjacent security area will still be reduced under Alternative 3 (553 acre reduction), but to a much lesser extent than Alternative 2 (2,442 acre reduction).

Summary

Table 31. Species Determination Summary

Sensitive Species[1]			Effects[4]		
Terrestrial, Avian & Amphibian	Habitat[2]	Presence[3]	Alternative 1 No Action	Alternative 2	Alternative 3
Spotted bat (*Euderma maculatum)*	Not Suitable	Not Expected	NI	NI	NI
Townsend's big-eared bat *(Corynorhinus townsendii)*	Suitable	Probable	NI	MIIH	MIIH
Pygmy rabbit (*Brachylagus idahoensis)*	Not Suitable	Not Expected	NI	NI	NI
Gray Wolf (*Canis lupus*)	Suitable	Probable	NI	MIIH	MIIH
Trumpeter swan *(Cygnus buccinators)*	Not Suitable	No	NI	NI	NI
Harlequin duck *(Histrionicus histrionicus)*	Not Suitable	No	NI	NI	NI
Peregrine falcon (*Falco peregrinus anatum)*	Suitable (*Suitable foraging habitat, no nesting habitat)*	Probable	NI	NI	NI
Bald eagle (*Haliaeetus leucocephalus)*	Suitable (*Suitable foraging habitat, no nesting habitat*)	Probable	NI	NI	NI
Northern goshawk[5] *(Accipiter gentilis)*	Suitable	Probable	NI	MIIH	MIIH
Columbian sharp-tailed grouse[5] *(Tympanuchus phasianellus columbianus)*	Not Suitable (*some potential wintering habitat at lower elevations of analysis area, but overall Not Suitable).*	Not Expected	NI	NI	NI
Greater sage-grouse[5,6] (*Centrocercus urophasianus)*	Suitable habitat limited to the Caribou Basin area, otherwise Not Suitable	Known	NI	NI	NI
Great gray owl *(Strix nebulosa)*	Suitable	Known	NI	MIIH	MIIH
Flammulated owl *(Otus flammeolus)*	Suitable	Probable	NI	MIIH	MIIH
Boreal owl *(Aegolius funereus)*	Suitable	Probable	NI	MIIH	MIIH
Three-toed woodpecker *(Picoides tridactylus)*	Suitable	Probable	NI	NI	MIIH

Columbia spotted frog *(Rana luteiventris)*	Not Suitable (*Outside range of species*)	No	NI	NI	NI
Boreal toad *(Bufo boreas)*	Suitable	Not Expected	NI	NI	NI
Other Special Status Species/Species of Local Concern[7]					
Migratory Landbirds	Suitable	Known	No Impact	Some site specific loss of habitat, but no take or long term impacts expected	Some site specific loss of habitat, but no take or long term impacts expected
Big Game	Suitable	Known	No Impact	Adverse	Adverse (*but less so that Alternative 3*)

[1] Sensitive species identified by the Regional Forester are known or suspected to occur on the Caribou NF (USDA- FS 2016). Population viability is a concern for these species as evidenced by current or expected downward trends in population numbers and/or habitat.
[2]Suitable habitat for species (for foraging and/or reproduction) occurs in the project or analysis area.
[3]Occurrence is within the analysis area is classified as "known", "probable", "not expected", or "no presence" in the analysis area determined by the amount, distribution, and quality of suitable habitat in and around the project area; reviewing file information of suitable habitat, sightings; survey data; site visits; and/or personal knowledge of species and habitat. Classification of occurrence is further defined in the Wildlife DFC worksheet (Green 2016).
[4]Determination of effects of alternatives: **NI:** "No Impact" No direct, indirect, or cumulative effects would occur because there is no suitable habitat in the analysis area, analysis area is outside the range of species, or species presence is not expected in the area due to a lack of suitable habitat, and lack of documented observations. **MIIH:** "May impact individuals or habitat, but will not likely contribute to a trend towards federal listing or cause a loss of viability to the population or species" due to direct effects to species or indirect effects to habitat important to their prey. **BI:** "Beneficial impact" due to expected improvement in habitat quality. **WIFV:** "Will impact individuals or habitat with a consequence that the action may contribute to a trend towards federal listing or cause a loss of viability to the population or species". A Conservation Strategy is required.
[5]Management Indicator Species – Caribou National Forest FEIS (USDA-FS 2003b D-40) and Revised Forest Plan (USDA-FS 2003 3-25)
[6]A candidate species for Endangered Species Act protection; warranted for protection under the ESA but precluded March 5, 2010.
[7]Note that these are not Forest Service Sensitive Species, and therefore, no effects determination is required, but relative impacts are given to complete the summary.

Table 32. Summary Comparison of Environmental Effects to Wildlife Resources.

Resource Element	Indicator/Measure	Alt 1 (NO Action)	Alt 2	Alt 3
Wildlife (*FS Sensitive Species and those species with State Management Plans occurring in the analysis area*)	Miles of new motorized trail	**0 miles**	**8 miles** Additional miles of motorized trail wouldresult in the impacts on wildlife known to occur as a result of motorized trails, including	**3 miles** Additional miles of motorized trail wouldresult in the impacts on wildlife known to occur as a result of motorized trails, including

Resource Element	Indicator/Measure	Alt 1 (NO Action)	Alt 2	Alt 3
			habitat fragmentation, displacement, avoidance of the trail corridor, disturbance, spreading of weeds, etc.	habitat fragmentation, displacement, avoidance of the trail corridor, disturbance, spreading of weeds, etc.
Wildlife (*FS Sensitive Species and those species with State Management Plans occurring in the analysis area*)	Open Motorized Route Density (mi/mi²) in the Caribou Mountain Special Emphasis Area Prescription area	**1.1 mi/mi^2** (this represents the existing condition for wildlife species,	**1.3 mi/mi^2** Increase would result in a OMRD that is further from the 0.7mi/mi^2 level that is described as being beneficial for elk and retaining high elk use, but below the 1.9 mi/mi^2 that is considered the minimum if big game management is a consideration. Also below the cap of 1.5 mi/mi^2 set for the prescription area during travel planning.	**1.2 mi/mi^2** Increase would result in a OMRD that is further from the 0.7mi/mi^2 level that is described as being beneficial for elk and retaining high elk use, but below the 1.9 mi/mi^2 that is considered the minimum if big game management is a consideration. Also below the cap of 1.5 mi/mi^2 set for the prescription area during travel planning.
FS designated Sensitive Species	Determination of Effect	"**NI" determinations** for all FS sensitive species.	"**NI" or "MIIH" determinations for all Forest service Sensitive Species.** This meets the objective that the project does not result in a " WIIH" determination (as described in the Wildlife DFC document, and the objective of implementing forest management that precludes sensitive species from being listed is being met	**NI" or "MIIH" determinations for all Forest service Sensitive Species.** This meets the objective that the project does not result in a " WIIH" determination (as described in the Wildlife DFC document, and the objective of implementing forest management that precludes sensitive species from being listed is being met

Noxious & Invasive Plants

This section discusses the components of the non-forested vegetationresource that could be affected by the proposed activities. This information is extrapolated directly from the Rangeland Resources and Noxious &Invasive Plants Specialist Report*(Heyrend, 2016)*. Thenon-forested vegetationresource analysis focuses on acres disturbed by trail construction. The analysis identifies the existing rangeland resource condition and discloses the potential effects on rangeland resources from the proposed activities.

Issues

Motorized travel has the potential to spread noxious weeds. The proposed action could have impacts on non-forested vegetation resources due to the increase in noxious weeds in the project area. The indicator used to compare alternatives for this issue is acres disturbed by trail construction. Comments received during scoping require that effects to the rangeland resource be analyzed, but neither existing resource condition nor anticipated effects are alternative driving issues.

Resource Indicators and Measures

Resource indicators and measures were developed based on the national strategy for Invasive Plant Species Management.The prescribed national strategy was used to evaluate the effects of the proposal. The following indicator provides a basis for comparing the direct and indirect effects of the project alternatives to the potential for invasive species infestation. The proposed action could have impacts on non-forested vegetation due to the increase in noxious weeds in the project area. The indicator for this issue will be acres of disturbance.

Table 33. Resource indicators and measures for assessing vegetation effects

Resource Element	Resource Indicator	Measure (Quantify if possible)	Used to address: P/N, or key issue?	Source (LRMP S/G; law or policy, BMPs, etc.)?
Noxious weeds	Trail construction – acres disturbed	Potential Acres infested.	no	Invasive Species, EO 13112

Methodology

Forest Service Manual (FSM) 2900 (Invasive Species Management) directs the Forest Service to use an integrated weed management approach to control and contain the spread of noxious weeds on National Forest System (NFS) lands and from NFS lands to adjacent lands. Forest Service Handbook (FSH) 2109.14 Pesticide Use Management and Coordination provides additional direction related to implementation of invasive plant management, and FSM 2150 Pesticide Use Management and Coordination provides policy direction.

The National Strategic Framework for Invasive Species Management (USDA Forest Service 2013) provides broad strategic direction for Forest Service programs and incorporates the Invasive Species Systems Approach which has four elements-prevention, detection, control and management, and restoration and rehabilitation.

The National Strategy and Implementation Plan for Invasive Plant Species Management (USDA Forest Service 2004) focuses on four key elements: preventing invasive species before they arrive; finding new infestations before they spread and become established; containing and reducing existing infestations; and rehabilitating and restoring native habitats and ecosystems.

The Forest Service Guide to Noxious Weed Prevention Practices (USDA Forest Service 2001) provides management guidance in the form of goals along with prevention practices. Forest Service policy identifies prevention of the introduction and establishment of noxious weed infestations as an agency objective. This guide provides a comprehensive directory of

weed prevention practices for use in Forest Service planning and wildland resource management activities and operation

At the regional level, the Intermountain Region of the Forest Service, headquartered in Ogden, Utah, issued an Invasive Species Management Strategy (2009) that outlines a regional plan for complying with national direction.

Information Sources
Information was compiled from available Geographic Information System (GIS) sources, TESP-IS/FACT database records, INFRA Range Database, 2210 rangeland planning record, and field review. Baseline information was also obtained from the Web Soil Survey available online at http://websoilsurvey.nrcs.usda.gov/. This survey provides information to evaluate resilience to disturbance and resistance to invasive annual grasses as directed in Gen. Tech. Rep. RMRS-GTR-322 (http://www.fs.fed.us/rm/pubs/rmrs_gtr322.html) .

Incomplete and Unavailable Information
For existing vegetation the mid-scale existing vegetation map was used to provide the overall extent of vegetation types and canopy covers at the landscape scale. It is coarse scale vegetation coverage data that is applicable to Forest level analysis. It is a single coverage and has a designation of cover type as well as a valuation attempt for shrub canopy cover. Even though this is coarse scale data, it is currently the most reliable data set.

Spatial and Temporal Context
The rangeland resources affected by this proposal is the width of the disturbance along the length of the trail. The effects of the project are long term because the proposed motorized trail construction would become added to the travel system.

Direct and Indirect Effects Boundaries
The spatial boundaries for analyzing the direct and indirect effects to rangeland resources are proposed trail locations because resources at the greatest risk of invasive plant establishment is the disturbed area. The temporal boundaries for analyzing the direct and indirect effects are the 2 years during the construction phase.

Cumulative Effects Boundaries
The spatial boundaries for analyzing the cumulative effects to rangeland resources are the combined area of the two sheep allotments; main vectors to invasive plant infestations are encompassed in the grazing allotment boundaries such as roads and trailheads.

Affected Environment

Vegetation

The main vegetation for Eagle Cr. /Morgan Meadow allotment includes: Conifer (40%), Deciduous Forest (39%), shrub land (17%), herbaceous (1 %), woodland (1%) and riparian (1%). The vegetation composition of the Caribou Mountain allotment is: mixed subalpine forest (39%), lodge pole pine (17%), aspen (16%), mixed needle leaf/broadleaf forest (11%), and mountain big sagebrush (10%).

Non-forested vegetation includes: mountain big sagebrush (*Artemisia tridentata* var. *vaseyana*), snowbush (*Ceanothus velutinous*), bitterbrush (*Purshia tridentata*), snowberry (*Symphoricarpos oreophilus*), and rabbitbrush (*Chrysothamnus* spp.). Major grass components are: Kentucky bluegrass (*Poa pratensis*), mountain brome (*Bromus carinatus*), slender wheatgrass (*Elymus trachycaulus*), and bluebunch wheatgrass (*Pseudoroegneria spicata*). The forb component for the drier sites include: balsamroot (*Balsamorhiza macrophylla*), arrowleaved balsamroot (*Balsamorhiza sagittata*), western hawksbeard (*Crepis occidentalis*), and buckwheat (*Eriogonum caespitosum*). In moist sites the forb component consists of meadow goldenrod (*Solidago canadensis*), cow parsnip (*Heracleum lanatum*), mountain bluebells (*Mertensia ciliata*), and tall and little larkspur (*Delphinium occidentale* and D. *bicolor*). Shrub land canopy cover are high than 15 percent canopy: 8 percent at 15-25%; 67 percent at 25-49%; and 24 percent at over 50%. Rangeland production range from 500 lbs/acre to 1500 lbs/acre (2210 files).

The Forest has an active invasive plant management program that incorporates all the principles of Integrated Pest Management (IPM).This includespreventative, manual, cultural, chemical, and biological principles (CNF 1996 & Caribou NF 2016).The Forest engages in regular inventory, mapping and monitoring of existing and new infestations. In weed-free areas, Early Detection and Rapid Response (EDRR) is an important part of the annual work for each program. Treatment actions would include: potential bio-control releases; selective backpack and stock-mountedherbicide applications along trails and in larger polygons where small pioneering infestations are inventoried. The intent is tofind new invasive plant infestations at the earliest stages of invasion resulting in decreased control costs and the need for repeated treatments. In addition, the Soda Springs Ranger District works with local county weed districts on cooperative education and prevention programs. These programs reach user groups such as ATV clubs, Backcountry Horsemen Chapters, public schools, hunting associations, other state and federal agencies, etc. Counties adjacent to the National Forests have created a number of Cooperative Weed Management Areas (CWMAs) that work both independently or with the Forest in the area to control invasive plants. Soda Springs Ranger District and Bonneville County are active members of the Highland CWMA.

Field observation and review of the TESP-IS FACTs database indicate the following noxious weed species are present in low density along roadways: Canada thistle (Cirsium arvense), and Musk thistle (Carduus nutans.) There was also a historic record of spotted knapweed (Centaurea stoebe) within the cumulative spatial area. No noxious weeds were located in the project area.Using the Fire and Invasive Assessment Tool (FIAT) procedure from Chambers et al. (2014), the project area ecosystems were ranked as having a high relative resilience to disturbance and resistance to invasive annual grasses (July 2016 field notes). Risk for annual grass infestations are low.

Table 34. Resource indicators and measures for existing condition

Resource Element	Resource Indicator (Quantify if possible)	Measure (Quantify if possible)	Existing Condition
Noxious weeds	Trail construction – acres disturbed	Potential Acres infested.	0

Environmental Consequences

Alternative 1 – No Action

Under Alternative 1, no new motorized trails would be built. No direct, indirect, or cumulative effects to non-forested resources would occur. Resource indicators and measures would be unchanged from the existing condition. See Table 34. Resource indicators and measures for existing condition.

Alternative 2 – Proposed Action

Direct and Indirect Effects

Recreational activities such as motorized travel on roads and trails can serve as vectors for invasive plant introduction and spread. Use of trails compact and disturb soils and can lower soil productivity. Soil displacement removes the nutrient rich surface soil from a site and the underlying mineral soil is often more erosive and lower in nutrients. (USDA 2001). These less productive sites are often repopulated with invasive plants. Therefore, the direct effect of the trail new/reconstruction is 6.94 miles. Von der Lippe et al (2013) found that on a motorized trail a seed can be dispersed 8 meters with wind dispersal morphologies and one meter for species without such adaptations. Using a six-foot buffer along the 8.42 trail miles, 6.7 acres would be disturbed and potential infested with invasive species. However, the implementation of the EDRR mitigation, it is expected the potential acres of infestation to be minimal.

With the construction of the trail, the 4.4 acres understory component of the conifer/aspen component would be removed and 2.3 of non-forest vegetation communities would be removed.

Resource Indicator and Measure 1

Table 35. Resource Indicators and measures for alternative 2 direct/indirect effects

Resource Element	Resource Indicator (Quantify if possible)	Measure (Quantify if possible)	Alternative 2 Direct/Indirect Effects
Noxious weeds	Trail construction – acres disturbed	Potential Acres infested.	6.7

Cumulative Effects- Alternative 2

Past, Present, and Reasonably Foreseeable Activities Relevant to Cumulative Effects Analysis

Cumulative effects are analyzed at the grazing allotments impacted because main vectors to invasive plant infestations are roads and trailheads. Vehicles, people and livestock promote the transportation of invaders into areas previously not infested. Field observation and review of the TESP-IS FACTs database, the following noxious weed species are present in low density along roadway: Canada thistle (*Cirsium arvense*), and Musk thistle (*Carduus nutans*.) There was also a historic record of spotted knapweed (*Centaurea stoebe*.)

Term Grazing Permits have provisions that addresses noxious weed management in the project areas, such as weed-free hay requirements and EDDR requirements.

Other existing roads and trails, as well as fragments of closed non-decommissioned roads are also present and reasonably foreseeable activity, and are potential vectors for invasive plant species. As well as small scale gold mine claims and associated mine plans are expected to periodically be submitted. Invasive species management EDDR provisions would be included in the mine plans. It is estimated 5 acres would be disturbed.

Resource Indicator and Measure 1

Table 36. Resource indicators and measures for alternative 2 cumulative effects

Resource Element	Resource Indicator (Quantify if possible)	Measure (Quantify if possible)	Alternative 2 Cumulative Effects
Noxious weeds	Trail construction – acres disturbed	Potential Acres infested.	11.7

Alternative 3

Direct and Indirect Effects

Recreational activities such as motorized travel on roads and trails can serve as vectors for invasive plant introduction and spread. Use of trails compact and disturb soils and can lower soil productivity. Soil displacement removes the nutrient rich surface soil from a site and the underlying mineral soil is often more erosive and lower in nutrients. (USDA 2001). These less productive sites are often repopulated with invasive plants. Therefore, the direct effect of the trail new/reconstruction is 3.14 miles. Von der Lippe et al (2013) found that on a motorized trail a seed can be dispersed 8 meters, with wind dispersal morphologies and one meter for species without such adaptations. Using a six-foot buffer along the 3.14 trail miles, 4.4 acres would be disturbed and potentially infested with invasive species. However, the implementation of the EDRR mitigation, it is expected the potential acres of infestation to be minimal.

With the construction of the trail, the 2.4 acres understory component of the conifer/aspen component would be removed and 2 acres of non-forest vegetation communities would be removed.

Resource Indicator and Measure 1

Table 37. Resource Indicators and measures for alternative 3 direct/indirect effects

Resource Element	Resource Indicator (Quantify if possible)	Measure (Quantify if possible)	Alternative 3 Direct/Indirect Effects
Noxious weeds	Trail construction – acres disturbed	Potential Acres infested.	4.4

Cumulative Effects – Alternative 3

Past, Present, and Reasonably Foreseeable Activities Relevant to Cumulative Effects Analysis

Cumulative effects are analyzed at the grazing allotments impacted because main vectors to invasive plant infestations are roads and trailheads. Vehicles, people and livestock promote the transportation of invaders into areas previously not infested. Field observation and review of the TESP-IS FACTs database, the following noxious weed species are present in low density along roadway: Canada thistle (*Cirsium arvense*), and Musk thistle (*Carduus nutans*.) There was also a historic record of spotted knapweed (*Centaurea stoebe*.)
Term Grazing Permits have provisions that addresses noxious weed management in the project areas, such as weed-free hay requirements and EDDR requirements.
Other existing roads and trails, as well as fragments of closed non-decommissioned roads are also present and reasonably foreseeable activity, and are potential vectors for invasive plant species. As well as small scale gold mine claims and associated mine plans are expected to periodically be submitted. Invasive species management EDDR provisions would be included in the mine plans. It is estimated 5 acres would be disturbed.

Resource Indicator and Measure 1

Table 38. Resource Indicators and measures for Alternative 3 cumulative effects

Resource Element	Resource Indicator (Quantify if possible)	Measure (Quantify if possible)	Alternative 2 Cumulative Effects
Noxious weeds	Trail construction – acres disturbed	Potential Acres infested.	9.4

Summary

The proposed action has the potential to spread noxious weeds and invasive plant species. As part of the project design and cooperative agreement, mitigation measures that are common to all action alternatives would protect the un-infested area by implementing Region 4 Invasive Species Strategy Prevention and Early Detection Rapid Response (EDDR) techniques.

Short-term Uses and Long-term Productivity

NEPA requires consideration of "the relationship between short-term uses of man's environment and the maintenance and enhancement of long-term productivity" (40 CFR 1502.16). As declared by the Congress, this includes using all practicable means and measures, including financial and technical assistance, in a manner calculated to foster and promote the general welfare, to create and maintain conditions under which man and nature can exist in productive harmony, and fulfill the social, economic, and other requirements of present and future generations of Americans (NEPA Section 101).

The productivity of the acres dedicated to the travel system could be recovered partially in the long-term, and perhaps fully in the very long-term. This would require closing the trail, and in steep areas, a re-contour of the slope to restore natural hydrology.

Unavoidable Adverse Effects

While certain impacts of trail construction can be avoided with mitigations and/or design features, many elements of motorized trail construction are inseparable from its construction

and use. Habitat fragmentation, disturbance and displacement of wildlife, increases in big game vulnerability, increased spread of noxious weeds are all impacts that are all associated with the Winchell-Dugway trail as proposed in Alternative 2 or 3) and are unavoidable with construction and use of the trail (Wildlife Resource Report).

Irreversible and Irretrievable Commitments ofResources

Irreversible commitments of resources are those that cannot be regained, such as the extinction of a species or the removal of mined ore. Irretrievable commitments are those that are lost for a period of time such as the temporary loss of timber productivity in forested areas that are kept clear for use as a power line rights-of-way or road.

Irretrievable Commitment:

Building new trail disturbs soils, removes vegetation, and is a dedicated use of the soil resources, which is an irretrievable commitment of resources (Soil Resource Report).

Irreversible Commitment:

No alternative will result in an irreversible commitment of soil resources, because the trail can be reclaimed (Soil Resource Report).

Motorized trails can be closed and re-contoured, given enough time vegetation will recover, and the impacts of habitat fragmentation and disturbance, etc. will ameliorate. The only foreseeable impact that is potentially irreversible is the establishment of noxious weeds. While the potential acres of infestations area expected to be minimal, once established in new areas, eradication of weeds, is for all practical purposes, irreversible. Even small areas of weed infestations threaten important wildlife habitat, such as is the case with Aspen stands (Wildlife Resource Report).

With the proper implementation of the appropriate BMPs, compliance with Forest Directives, design recommendations outlined in this report, soils specialist report, the project proposal, and previous experience, it is reasonable to conclude that irreversible effects from any of the alternatives are highly unlikely.

Other Resources Considered

Rangeland Resources

Grazing Management

National Forest System grazing allotments are located on National Forest System land and overlap with the proposed trail. Two USFS grazing allotments located in the proposed area are Caribou Mountain S&G and Eagle Creek/Morgan Meadows S&G. Livestock grazing within these allotments is by sheep.). The Rich S&G Allotment Complex S&G AMP Revisions (EA/DNFONSI 1998 and SIR 2009) authorized sheep grazing on the Caribou Mountain S&G allotment. The North End Sheep AMP Revisions (FEIS/ROD 2003) authorizes sheep grazing on the Eagle Morgan Meadows allotment. Grazing takes place in the summer and fall (July to September). Currently, two term grazing permits have been issued. The proportion of the various grazing allotments disturbed by proposed action is less than one tenth of a percent of the allotments. Direct effect impact of the action alternatives includes less than one tenth of a percent of available vegetation would be remove during trail

construction. Indirectly, there would be improve access to the sheep allotments that would improve sheep distribution across the allotments. Grazing management is meeting Forest Plan prescriptions. It is not expected that any alternatives would impact the grazing management in the project area.

Heritage Resources

Cultural surveys have been conducted for each of the trail alternatives. A cultural resource inventory report that provides the survey results and evaluates the identified cultural resources is in preparation. Consultation with SHPO and the Shoshone Bannock Tribes will occur prior to the implementation of the project.

Climate Change

The Forest Service and other federal agencies are asked to consider Greenhouse Gas Emissions (GHG) and the effects of climate change on a proposed action and its environmental impacts in National Environmental Policy Act (NEPA) reviews (USDA, 2009)((CEQ), 2016)that may be relevant to the decision-making process.

Meaningful increases in greenhouse gases (GHG) that contribute to global climate change are not expected for both action alternatives. The proposed trail construction/reconstruction could encourage more people to recreate closer to home, reducing emissions from full-sized vehicles, but the decrease would be a small percentage of existing full-sized vehicle travel. Measurable impacts to air quality under both alternatives are not likely.

Uncertainty exists concerning the potential changes in the watershed due to climate change that may impact the resources in the area, i.e. changes in the timing, location and quantity of precipitation; and extreme weather events such as floods. Both action alternatives consider effects to water quality and the aquatic influence zone providing analyses that is meaningful for future weather events related or not to climate change.

Threatened and Endangered Plants

There are no Threatened or Endangered plants know or expected to occur within the project analysis area (USFWS 2016). Ute ladies'-tresses (*Spiranthes diluvialis*) a threatened orchid is not found in the area and habitat for this species in the project area is too high in elevation to be considered potentially suitable. Whitebark pine (*Pinus albicaulis*), a candidate species for listing under the Endangered Species Act (ESA), is not known or expected to occur in the area of the project.

Sensitive Plants

There are three plant species listed as sensitive for the Intermountain Region and known to occur on the Caribou National Forest: starveling milkvetch, Cache beardtongue and Payson's bladderpod. Only Payson's bladderpod is known or suspected to occur within the project analysis area.

Payson's bladderpod (*Lesquerella paysonii*) is endemic to the carbonate mountain ranges of west central Wyoming and adjacent to Idaho. Payson's bladderpod is found on sparsely vegetated ridgelines and at a lesser degree on slopes in openings in sagebrush and forested stands. Elevation ranges are from 6,000 to 9,950 feet with most populations above 8,000 feet. One population that occurs separate from its main range in Idaho can be found on Caribou Mountain and the spur ridges around the summit (Moseley 1996). Surveys for this species were done on July 19th, 2016 and no populations were found in proposed project activity areas.

Other Required Disclosures

NEPA at 40 CFR 1502.25(a) directs "to the fullest extent possible, agencies shall prepare draft environmental impact statements concurrently with and integrated with …other environmental review laws and executive orders."

- Consultation will occur prior to implementation of the project as described under the Heritage Resource section above.
- Consultation with the USFWS is described under the Wildlife Resource section in Chapter 3.
- The Idaho Department of Environmental Quality, Pocatello Office was consulted both for the expectation of the new, 2014 Integrated Water Quality Report and on specifics for the Clean Water Act permitting that may be required under alternatives 2 and 3.

CHAPTER 4. CONSULTATION AND COORDINATION

Preparers and Contributors

The Forest Service consulted the following individuals, Federal, State, and local agencies, tribes and non-Forest Service persons during the development of this environmental assessment:

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FEDERAL, STATE, AND LOCAL AGENCIES:

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Bureau of Land Management – Pocatello Field Office

Bureau of Land Management – Upper Snake Field Office

Bureau of Reclamation

Federal Highway Administration

Idaho Department of Environmental Quality

Idaho Department of Fish and Game

Idaho Department of Lands – Eastern Supervisory Area

Idaho Department of Transportation

Idaho Department of Water Resources

Idaho Parks and Recreation

Idaho State Department of Agriculture

U.S. Army Corps of Engineers

U.S. Environmental Protection Agency

U.S. Fish and Wildlife Service

Lincoln County Wyoming Planning and Development

Power County Commissioners – Idaho

Bonneville County Commissioners – Idaho

Board of Lincoln County Commissioners - Wyoming

TRIBES:

During the scoping period (February, 2016) the Caribou-Targhee National Forest requested comments and input from the Shoshone-Bannock Tribes. No comments were received at that time. This DEIS will be made available to the Shoshone-Bannock Tribes for comment.

OTHERS:

A complete list of individuals and entities that received the scoping for this project is available in the project record.

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Appendix A – Travel Management, Criteria for Designation of Trails

The Forest Service Travel Management Regulations (36 CFR 212) direct the Forest Service to consider specific criteria when designating trails on National Forest System lands. The criteria is broken down into two categories: general criteria (36 CFR 212. 55 (a)) and specific criteria (36 CFR 212.55 (b)).

General Criteria For designation of National Forest System roads, trails, and areas on National Forest System lands

Regulations direct that when designating trails on National Forest System lands for motor vehicle use, the responsible official shall consider effects on natural and cultural resources, public safety, provision of recreational opportunities, access needs, conflicts among uses of National Forest system lands, the need for maintenance and administration, and the availability of resources for that maintenance and administration. The analysis for this project included the effects to these criteria and can be found in the individual specialist reports and is summarized in Chapter 3 of this EIS.

Specific Criteria for designation of trails and areas

In addition to the information listed above, 36 CFR 212.55 (b), requires that the responsible official also consider effects on the following, with the objective of minimizing:

1. Damage to soil, watershed, vegetation, and other forest resources;
2. Harassment of wildlife and significant disruption of wildlife habitats;
3. Conflicts between motor vehicle use and existing or proposed recreational uses of National Forest System lands or neighboring federal lands; and
4. Conflicts among different classes of motor vehicle uses of National Forest System lands or neighboring federal lands
5. Compatibility of motor vehicle use with existing conditions in populated areas, taking into account sound, emissions, and other factors.

The table below summarizes impacts related to each criteria and explains how impacts would be minimized by selecting Alternative 3 (the preferred alternative) over the Proposed Action (Alternative 2). The information summarized in the table is supported by the information and analysis that is included in the individual specialist reports for this project. The specialist reports are included in the Project Record.

Table 39. Minimization Criteria Summary

CRITERIA	SUMMARY OF EFFECTS[1]
1. SOIL WATERSHED VEGETATION OTHER RESOURCES	*Soils:*Alternative 3 would dedicate seven less acres (overall) to the travel system. Selection of Alternative 3 would minimize impacts to soil resources in comparison to the proposed action. *Vegetation:* Alternative 3 would potentially infest 2.3 less acres with noxious weeds than the proposed action. Selection of alternative 3 would minimize impacts for noxious weeds in comparison to the proposed action. *Watershed:*Alternative 2 authorizes the most stream crossings (5), causing minor negative, short term effects from bridge construction. 2.04 miles of new trail would be built in the AIZ, causing minor negative impacts from construction; these impacts would occur in the short-term, decreasing within two years to very minor in the long-term. Alternative 3 would authorize less bridges than alternative 2 (3) and would include 1.04 miles of new trail in the AIZ. For these reasons, alternative 3 would be more desirable than alternative 3, thus minimizing impacts on the hydrologic resource. *Other Resources:* *Roadless Areas and Recommended Wilderness Areas:* Under Alternative 2, roadless characteristics and wilderness qualities would be affected, however, the proposed action would not affect the areas suitability for wilderness designation. An additional 2,583 acres would be visually affected by a motorized road or trail within the RWA. A sound decibel of approximately 93.75 – 96.75 dB could be heard approximately 73 feet from the RWA boundary. Alternative 3 would also have impacts to the roadless characteristics and wilderness qualities, but the action would not affect the areas suitability for wilderness designation. An additional 228 acres would be visually impacted by a motorized road or trail under this alternative. A sound decibel of approximately 77.5 – 80.5 could be heard approximately a ¼ mile (the closest point for alt 3) from the RWA boundary. Effects to visuals, noise, roadless characteristics and wilderness attributes would be less with Alternative 3. The selection of Alternative 3 would minimize the impacts to Roadless Areas and Recommended Wilderness Areas. *Fisheries:*Alternative 2 authorizes the most stream crossings making it the least desirable alternative for this measure. The negative effects are relatively small due to the small scale of bridge construction authorized. Negative effects would mostly be short term and decrease to very small within two years. 1 miles of new motorized trail in Tincup and 1.04 miles of new motorized trail in the AIZ of Bilk Creek would be built, causing minor impacts from the construction would occur in the short, decreasing within two years to very minor for the long term. Bridges under alternative 3 would be built on Bilk

	Creek, causing minor negative impacts to the creek. Bridges would best minimize the negative effects of motorized crossings in Bilk Creek. Because alternative 3 authorizes fewer bridges than alternative 2, it is more desirable than alternative 2. Alternative 3 would construct 1.04 miles of new motorized trail in the AIZ of Bilk Creek. This alternative also increases miles of motorized trails within AIZs, although about half the miles as alternative 2. This alternative would be than alternative 2. Selection of alternative 3 would minimize impacts to the fisheries resource.
2. HARASSMENT OF WILDLIFE SIGNIFICANT DISRUPTION OF WILDLIFE HABITATS	*Harassment of Wildlife:* Motorized trails contribute to harassment and disturbance of wildlife; the impacts to wildlife from motorized trails is correlated to the miles of trail in an area. Less motorized trail construction would result in less disturbance and harassment to wildlife. Alternative 3 would construct almost five miles less of motorized trail than Alternative 2. Selection of Alternative 3 would minimize wildlife harassment. *Significant Disruption of Wildlife Habitats:* Additional miles of motorized trail would result in impacts to wildlife. The impacts known to occur as a result of motorized trails include: habitat fragmentation, displacement, avoidance of the trail corridor, and disturbance. The motorized trail constructed under Alternative 3 would be almost 5 miles less than that constructed under Alternative 2. Both Alternative 2 and Alternative 3 would result in an increase in the Open Motorized Route Density for the applicable prescription areas, 1.3 mi/mi^2 and 1.2 mi/mi^{2,} respectively. These increases would result in an OMRD that is further from the 0.7 mi/mi^2 level that is described as being beneficial for elk and retaining high elk use, but below the 1.9 mi/mi^2 that is considered the minimum if big game management is a consideration. The OMRD levels would be within the range set for the prescription area during travel planning. Selection of Alternative 3 would minimize impacts to wildlife habitats.
3. CONFLICTS BETWEEN MOTOR VEHICLE USE AND EXISTING OR PROPOSED RECREATIONAL USES OF NFS LANDS OR NEIGHBORING FEDERAL LANDS	Alternative 2 has the highest potential to displace hunters and non-motorized users of the area who would find they no longer have a quiet area to hunt or recreate in. Motorized route designation could displace non-motorized users and affect visitor satisfaction. The opportunity to use portions of this trail is changed from non-motorized use to motorized use, but the use of the trail is not lost to non-motorized use. Effects to motorized users under this alternative would be an increase of designated routes, which would lead to an increase in noise levels depending upon the use the area received. Alternative 3, when compared to alternative 2, has the least potential to displace hunters and non-motorized users due to its location in relation to the undisturbed area of the IRA. This alternative would construct a motorized route on the northern portion of the IRA and would not bisect the natural, unroaded area of the IRA. The degree of use conflict depends on the individual, the group they

	identify with, their experience, and the recreational setting of the particular road, trail, or area. Selection of Alternative 3 would minimize the impacts to the existing recreational users in the area.
4. CONFLICTS AMONG DIFFERENT CLASSES OF MOTOR VEHICLE USES OF NFS LANDS OR NEIGHBORING FEDERAL LANDS	Idaho Statutes Sections 49 and 67 (Idaho State legislature 2007a, b) contain requirements for ATV and motorbike registration and use on and off highways in Idaho, including use on paved and unpaved Forest roads. All designated motorized trails/areas require compliance with Idaho State law. Motorized trails are only open to motorized vehicles 50 inches in width or less and that applies to both proposed trails in the action alternatives.
5. COMPATIBILITY OF MOTOR VEHICLE USE WITH EXISTING CONDITIONS IN POPULATED AREAS, TAKING INTO ACCOUNT SOUND, EMISSIONS, AND OTHER FACTORS	Alternative 2 would have the largest sound impact (93.75-96.75 dB) on the RWA due to the trail being approximately 73 feet (at its closest point) from the RWA boundary. The perceptions of these sounds are subjective based on an individual user and may impact some individuals more than others. Alternative 3 would have less sound impacts (77.5 – 80.5 dB) on the RWA, when compared to Alternative 2 because the trail comes within approximately 1070 feet of the RWA boundary on the north end of the IRA. These sound levels are expected to have a minimal impact on the use of the RWA. Measurable impacts to air quality under both alternatives are not likely. Selection of Alternative 3 would minimize the impacts of a motorized trail in the project area.

1 Information in this column is supported by the information and analysis that is included in the individual special reports and summarized in Chapter 3 of the EIS.